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THE ARCHITECTURAL FORUM

FOR QUARTER CENTURY THE BRICKBUILDER

RECENT COUNTRY HOUSES
from the designs of
PEABODY, WILSON & BROWN

THE COTTAGE PLANNED ORPHANAGE
By Harold C. Whitehouse

PROMOTION AND FINANCING OF BUILDING OPERATIONS
By Charles A. Whittemore

THE NEW ARSENAL TECHNICAL SCHOOLS, INDIANAPOLIS, IND.
H. Van Buren Magonigle, Architect

FEBRUARY 1919

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ART SCIENCE AND BUSINESS OF BUILDING

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THE EDITORS FORUM

WITHIN recent years a new thought has been injected into the conduct of institutions for correction and those maintained for charitable purposes. This has been brought about by the scientific observation of results produced in these institutions, and it has been found beyond question, that every effort made to render them as human in character as possible has proven of distinct value. Thus, the former idea of housing large numbers of people in buildings of the block type, several stories high, is rapidly being displaced by a tendency to carry this work out in smaller groups, each of the buildings approaching, as far as possible, the character of a private house in which a smaller number of inmates may mingle on social terms not possible in the large community.

This change of procedure is probably of greater value in orphanages than in any other type of institutional building. Educators are of the unanimous opinion that the best results in training children can be had where the number in any one group is kept down to a figure that can be easily instructed by a single teacher, and those interested in developing institutional children's home life strongly recommend the restriction of those in a single group to a number that can be supervised by one matron acting in the capacity of a mother.

Orphanages are buildings that we would gladly do without if it were possible to remove the conditions which make them necessary, but since this cannot be, it is our duty to develop them so they may reflect in a certain measure, the atmosphere of the private home for which they must necessarily act as a substitute. The unfortunate occurrences of the last year resulting in many deaths from war and influenza epidemic, will in the next few years undoubtedly increase the need for buildings of this type, and will require study of the problem by many architects. We are fortunate in being able to present in this issue of THE FORUM, the first of a series of articles on the planning of orphanages conducted on the cottage principle. The information presented has been gathered by the author, Mr. Harold C. Whitehouse, of the firm, Whitehouse & Price, Spokane, Washington, through a visit to the most representative institutions of the kind in the country in preparation for planning a modern orphanage.

THE greatest result of the war is the awakened interest on the part of nations, and individuals composing nations, in efforts to secure more just and rightful dealings in human intercourse. More than four years of harrowing warfare, with its accompanying loss and suffering, have given rise to this idealism, and if the war has not been waged in vain this spirit will gradually permeate all walks of mankind. Previously, there was a distinct line of demarcation between the professions and business. One little understood the other, and saw in their respective methods of handling problems, nothing in common. There are phases of special value in each, and in the profession of architecture, where a large portion of the practitioner's duties approach business character, it will be distinctly worth while to adopt good business principles for their guidance. The manner in which emergency government work was carried on through bureaus in which both business and professional men were associated, has aided greatly in bringing about a better mutual understanding. Ethics in business are not inconceivable, nor are the ethics of business and of the professions incompatible. Thus in the second paper discussing "The Architect of The Future," the author considers what at first thought appears a matter of interest only to business men — the form of a sales organization as a direct application to an architect's office. This touches on that side of the practice of architecture which distinctly approaches business and as such must be governed by good business principles, if client and architect are to speak the same language.

AN architectural problem that will occur with increasing frequency in the years immediately ahead will be treated in the March issue. This relates to the design of farm buildings. Agriculture as the first basic industry has not received the encouragement in this country to which its importance entitles it, and as a consequence in the older parts of the country it has been allowed to deteriorate to such an extent that vast areas are wholly dependent upon others for their food supply. The war has again come to our rescue in this and made us realize the necessity of developing our agricultural resources. Many of our returning soldiers will take up the land movement and will thereby create a need for farm buildings. The tendency of this movement is toward small holdings, and it is evident in the light of present economic conditions that they can only be made remunerative through the use of labor saving devices. The first of these is properly designed and equipped buildings. Many architects have in past years contributed greatly to farm efficiency through their ability in planning farm groups for large private estates. The future holds, however, far greater opportunity, and the articles and illustrations of the next issue will indicate the attractive field the design of farms offers to architects.

Nowhere else in the world are there more imposing masses of architecture than in New York City. Visitors to our shores never cease their comments of wonderment. The FORUM'S frontispieces for 1919 will record some of these characteristic compositions by means of a particularly fine series of photographs exhibiting much artistic character.

Edward F. Stevens, Boston, Mass., Architect

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VOLUME XXX NUMBER 2

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VIEW IN PERSHING SQUARE, NEW YORK CITY
From photograph by John Wallace Gillies

This illustration is the second of a series showing distinctive architectural street composition of New York City. Detail of Grand Central Station with Hotel Biltmore in background.

THE ARCHITECTURAL FORUM
FOR QUARTER CENTURY THE BRICKBUILDER

VOLUME XXX FEBRUARY 1919 NUMBER 2

The Cottage Planned Orphanage

PART I

By HAROLD C. WHITEHOUSE

THERE are many methods of caring for normal dependent children. Many authorities say the " placing out " of the dependent child in a properly selected home is the ideal way; this is true, but not always workable in some localities and not favored. Others prefer the orphanage where the child is cared for from early childhood up to and beyond the age of adolescence.

Whatever the method, it is essential to have some sort of a receiving home, which would be " a wayside inn on the road from homelessness to a home. It is a clinic for medical and surgical examinations in order that the mental age and characteristics of children may be ascertained. It is a school for brief courses in manners, conduct, and, in addition, a place where human love, sympathy, Divine teaching and promise may reach lives that have too often previously suffered physical, mental and spiritual neglect." *

Whether the institution is organized for the permanent care of the child or does a work of " placing out," the most modern and up-to-date method of caring for the child is by the cottage plan. There are, however, many well planned and well administered institutions built on the congregate plan, where the children are housed in one building, but most authorities favor the cottage group system.

There are many schemes for housing of dependents in cottage-planned orphanages. In general, the system is to divide the total number of children into groups of eight, twelve, sixteen, twenty, twenty-five and even thirty to a cottage (any number higher than this usually borders on the congregate plan), housing them in separate cottages under the care of a cottage mother or matron.

A conference called at the White House in 1909 by President Roosevelt pronounced emphatically in favor of the cottage plan, and indicated the number of twenty-five as a desirable unit.

Of course, boys and girls should be kept in separate cottages. Each cottage has its own kitchen and dining room, in fact is a typical home in all its appointments, where the child may be given as near a normal home life and instruction as possible. The children do most of the housework, such as cleaning, bed-making, cooking and the serving of meals.

The schooling of the children is either under the direction of the institution having its own school system, together with industrial training; as that of the Hebrew Sheltering Guardian Society, Pleasantville, N. Y., and the New York Orphanage, at Hastings-on-the-Hudson; or the children may be sent to public schools. Some institutions maintain their own grade schools and send the child out to the public high school. Where the institution maintains its school system the hours of school are worked out to suit the system of home training in the cottages. Allowing the orphan children to mingle with playmates at the public school seems the best system, and is, of course, less costly.

It is of inestimable value to any architect who has the planning of an orphanage to inspect the institutions of this character in the country, and become familiar with their methods. An architect planning an orphanage should be thoroughly acquainted with the entire workings of the administrative side of it. If he knows this, the many mistakes incorporated into the various institutions of the country will not be duplicated.

The writer has recently been planning an orphanage, and three months were spent with the trustees in formulating a scheme of administration, and the consultations were almost daily throughout that time. Dr. Hastings H. Hart, an authority on child helping, in his book on " Cottage and Congregate Institutions for Children," Russell Sage Foundation, says: " The architect should be selected early in the proceedings. If possible he should have had some practical experience in erecting institutions. If he lacks that experience, it will be economical to send him at the expense of the committee to study similar institutions. It is very desirable that he should accompany the committee in any visits that they may make, in order that they may receive concurrent impressions. There are hundreds of institutions in the United States that have been made showy and pretentious, in order to produce a monumental effect, while the provision for children and employees is inadequate. The architect should know how to secure beauty by

*See " Child Placing in Families," W. H. Slingerland, Ph.D., Russell Sage Foundation, New York.

he lines and proportions of the building, rather than by expensive carving and other elaborate decorations. He should know how to secure the maximum of space, conveniently arranged, with the minimum of waste space and expensive material."

First: The selection of the site is important, and before purchasing the same it should be studied from all angles. It is unfortunate that so many institutions, when contemplating building, call the architect in for advice after the purchase of a site. Then, too, if the grounds are to be used for agricultural purposes the advice of an expert agriculturalist should be sought. But principally the site should be selected for its general healthfulness, which includes adequate sunlight, water supply, drainage, etc. The question of railroad facilities, which involves the shipment of fuel and its handling, is an item of no little consequence. Locations that are remote and inaccessible are not conducive to keeping good employees.

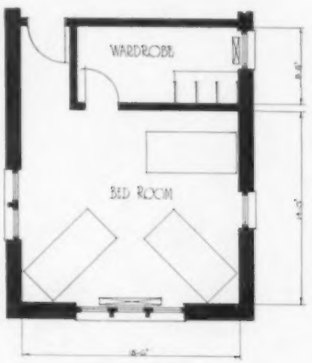


Fig. 1

Second: The general scheme of the whole plan can be well worked out only after such questions as the following have been settled: What is the number to be maintained in a cottage and the total number to be cared for? Shall there be a general dining room for all the children or shall the cooking and the feeding be done separately in each of the cottage units? Shall the children receive their school training at the institution or shall they go to the public school? Shall there be a central laundry building or shall there be special provision made for the instruction of girls in the laundry work? Shall the institution maintain an industrial training school? What method of heating will be used? Where will the institution get its water, and will it be pure water? Shall the institution have its own electric light plant or shall it obtain it from some public service company? What method will be employed for the disposal of sewerage? Shall there be a special building devoted to recreation? Shall the bread baking be done in a separate building or in the kitchens of the cottages? Shall there be a separate chapel building? Shall there be an assembly room? Shall there be a building housing the offices of the superintendent and other officers of the institution? What other departments shall it contain? What quarters shall be provided for the employees?

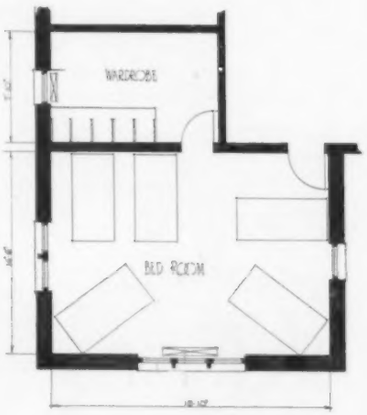


Fig. 2

Whatever the commission is, let the final plan, with reference to conveniences, such as the kitchen arrangements, bedrooms, plumbing, heating, etc., spell efficiency from every angle. If this is true, the scheme is bound to be good architecturally, for after all this is one of the fundamental principles of good designing. I dwell on this particular side of the question because in my visits to various institutions through the country I found many buildings where the architect was not given sufficient information to enable him to give the owners the best results.

This article is intended to discuss, particularly, the orphanage for care of normal dependent children, from early childhood and up to the time when they can be sent out in the world to make their own way. No particular discussion will be brought out with reference to methods of schooling or planning of the same. This is an important consideration, but is too lengthy a discussion for this article. The general scheme of schooling should be thoroughly worked out, as it is sure to have an important bearing on the details of planning. For instance, if the children go to a public school where the hours might be long, and location some distance away, the preparation of meals by children in the cottages might be impossible, and a central dining room be used. Time is an important factor in the lives of these children. A fine example of clock-like regularity and utilization of time has been worked out at the Hebrew Sheltering Guardian Society, Pleasantville, N. Y. This place maintains its own educational system and the children's school hours are fitted in to carry on domestic training to an efficient degree.

COTTAGES. — Let us take for example a cottage and its requirements for the housing of fifteen to thirty children, ranging in age from five or six up to eighteen to twenty-one years, either boys or girls; if the funds in hand are sufficient, a cottage having bedrooms for the accommodation of one, three and five beds each, is nearing the ideal for handling the children. This arrangement works well by placing the younger children in the bedrooms accommodating five beds, the next group in the rooms accommodating three beds, and lastly, the oldest in the single bedrooms. In some cases two older and sometimes the younger ones can be housed in a room of two beds, but this is not generally accepted, although oftentimes in cottage groups two children can be found who are trustworthy. Some institution managers

object seriously to having two in a room.

The bedrooms should be studied to give the maximum light, ventilation and sunshine for at least half the day. The beds should be properly placed to avoid draughts across the heads. The illustrations, Figs. 1 and 2, suggest a window arrangement and the location of beds. Ample space should be provided for making up the bed, also a chair for each child. Windows on two sides of the bedroom are almost indispensable, and to have them on three sides is much better. This applies to the bedrooms of three and five-bed capacities. It is not a serious fault if the single bedrooms are lighted and ventilated from only one side. The bedrooms may be kept down in size if the small-sized single beds are used. These are made varying in size from 3 ft. x 4 ft. 6 in. to 3 ft. 6 in. x 6 ft. 6 in.

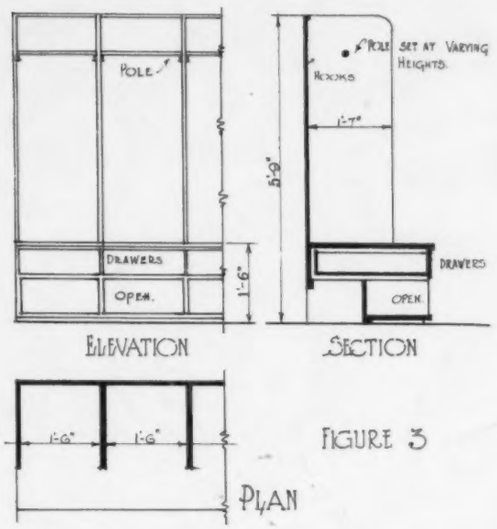


FIGURE 3

Fig. 3. Details of Wardrobe

It will be found in planning an orphanage of this type, reducing the number in the sleeping rooms, that the bedroom floor plan spreads over quite an area and governs to a great extent the balance of the cottage unit. It is advisable to get good ventilation in these rooms, thereby making it possible to cut down the floor area.

Some states have laws governing the cubic contents of bedrooms for such places. As a minimum each child should have about 50 square feet of floor space, and not less than 500 cubic feet of air space. The New York law requires 600 cubic feet of air for each dormitory inmate in child-caring institutions.

A low ceiling height is not a fault but an economy, providing the ventilation is sufficient. It reduces the cost of construction, maintenance and heating.

In direct connection with the bedrooms should be placed a dressing or locker room. This room has many advantages, mainly providing a place in which the child can dress and undress, which is particularly desirable in cold weather. The dressing room can be kept warm, while bedrooms can be opened during the sleeping hours for an abundance of fresh air. This room may have a clothes locker, wall seat or a chair, for each child. These lockers may be fitted with doors, each child having its own key or a combination lock. The locker system, however, seems to be quite a little in disfavor among matrons of experience. It encourages petty thieving to a certain extent among the children. The best method the writer uses is the open locker or stall as shown in Fig. 3. The child's effects are hung in sight, insuring good ventilation and easy inspection by the cottage mother. Most superintendents prefer to have the child's toys and various other things they love, kept in lockers or pigeonholes in the play room or elsewhere, away from the bedrooms. Cottage matrons as a rule prefer to have the children forbidden in their bedrooms during the day. This applies particularly to the younger children, but not of course to the older group.

Instead of using the open stall locker some institutions provide a small bureau or chiffonier for the child, which is placed in the bedroom or in a separate dressing room. A utility box is sometimes provided for each child at the foot of the bed; this serves as a seat and the chair can be dispensed with.

Some institutions have had to plan their cottages on a less expensive method of housing children. The cottages holding from twenty-five to thirty have two dormitories, holding twelve to fifteen beds each on opposite ends of the house, with the matron's bedroom between. At the other ends of the bedrooms were located the locker or dressing rooms and between these a good-sized toilet. This constituted in the main the second-floor plan.

The architect will find that in order to keep the house unit down to a practical working space and make it possible for a single cottage matron or mother to keep a proper watch on her children it will be better in a cottage housing twenty children, providing bedrooms of one, three and five-bed capacities, to have a few bedrooms, mostly single, on the third floor, together with small toilet arrangements. This number of beds provided on the second and third floors makes the required area for the first floor about right.

In working up the plan of a cottage housing eight, twelve or sixteen it is easier to imitate the home than in those of larger size. Cottages of such capacities are almost ideal, but of course much more costly to maintain per child.

Whatever the plan of the cottage may be, the matron's bedroom should be centrally located for the purposes of supervision. Some orphanages have a direct opening from the matron's bedroom to the dormitories, so that she is in close touch with all that is going on in the sleeping quarters.

The matron or cottage mother should be provided with a good-sized bedroom and clothes closet, and a

private bath should be in connection therewith. If the plan will allow, an extra bedroom directly connected is convenient in case of a child's illness where night care is necessary. Either a room of this type, or a door opening from the matron's bedroom into one of the bedrooms of three beds, might be used in this way. If a child is threatened with a contagious disease, the other beds in the room may be moved into one of the larger bedrooms temporarily until the child's disease is ascertained. Another scheme to take care of this emergency is to provide a large enough room for the matron to accommodate an extra single bed for a sick child.

A system to care for the linen, such as sheets, pillow cases, blankets, towels, face cloths, etc., should be carefully worked out. If these various articles are to be apportioned to each child, the linen closet or room should have a case of the proper size to take these various things, folded a certain way and studied out for the condensation of space. If this system is not used, cupboards or open shelving in a good sized, well lighted and ventilated linen room are sufficient. The shelves should be adjustable. In this latter case the room would be in charge of one or two of the older children. A laundry chute direct to an auxiliary laundry room in the basement may be built in to good purpose.

The toilet rooms should be located to give the best access from the bedrooms. A single toilet room containing showers, water closets, lavatories, etc., is preferable to several toilets placed in different parts of the bedroom floor — the matron can better supervise the children in the morning when the toilet room is being used to its capacity. In talking with one authority recently, the discussion of the number of various plumbing fixtures was taken up and he said " that for efficiency you should have an abundance of fixtures." It is the opinion of the writer that for a girl's cottage of thirty, the following is the minimum of fixtures: Four water closets, eight lavatories, three showers.

These fixtures are to be located on the bedroom floor. There should, however, be a toilet on the first floor for the use of the children when running in from play. There should, of course, be a private toilet for the matron on the first floor.

Some institutions provide a locker room in the basement or first floor. This room is furnished with locker or stall lockers in which the children hang their play clothes and shoes. The water closet (urinal for boys) and lavatories placed here are a great convenience. The children coming in from play or school before meal time can clean up on the first floor without going to the bedroom-floor toilet.

For a boys' cottage of thirty, the minimum number of fixtures may be the same except in the number of water closets, which might be reduced to three on the bedroom floor and a urinal substituted.

For cottages housing about twenty children the minimum number of fixtures, whether for boys or girls, might be about as follows: Three water closets, six lavatories, two showers.

Of course any number of fixtures in excess of these given will be found advantageous in the quickness of getting the children washed and dressed in the morning. In the cottage planned orphanage, where the children are doing most of the work around the home, such as sweeping, cleaning, bed making and cooking, it is a distinct advantage to provide everything for the dispatch of the work. A child living at an orphanage on this plan has a full day together with its schooling.

The most serviceable material is none too good for the partitioning of showers, water closets, baths, etc. Where children are being trained, especially boys, a material of great permanence should be used. Thin plaster partitions painted do very well in their proper place, but it is the writer's opinion, after visiting many orphanages, and paying particular attention to this detail, that marble, tile, terrazzo, or any other equally permanent material is the only thing to use. It is far cheaper in the end.

The floors of toilet rooms should be tile, marble, terrazzo or some other equally good permanent watertight material. There seems little argument against such materials where children are spilling water continually, and abusing the plumbing fixtures, thus causing more or less leaks. Permanent material for the floor is good insurance against stained ceilings below, especially in the case of framed floors. It is well to have floors of toilets pitched slightly to a floor drain, to take care of accidental leaks, and also for convenience in cleaning.

The water closets should be given the best attention when being selected. The flush valve closet with the valve concealed or a tank type of flushing concealed is no doubt the best. The wall hung type of closet is an excellent fixture, a little more costly than some of the other types, but is most sanitary. The closet seat will be abused more than any part of any fixture in the house, therefore use the strongest and best obtainable. From observation, wood-finished seats do not give the best results unless they are the sanitary open-front type. These are good but if used the closet should have a lip on the bowl. There are a number of excellent seats on the market, of wood cores, composition covered. These are sanitary, most of them acid proof, are more easily kept from getting foul, and are unbreakable.

The heads of various orphanages differ in their opinions about doors to water closet enclosures. Some think the doors are a detriment, while others believe them essential, stating the child should be taught modesty from the start. This is a problem that is solved in various ways. Probably no better method is to be found than to have doors which

might be the usual type of short door, on spring hinges, the bottom of which is kept up some sixteen or eighteen inches above the floor or at the height of the child's knee, this depending on the size of the child using the fixtures.

The baths for children above the ages of eight or nine years, and in cases younger, may be showers, a liberal number of which is of great advantage. The showers may be of the enclosed type or a series of wall showers in one large room. The enclosed type with a small dressing space adjacent is generally recommended for institutional practice.

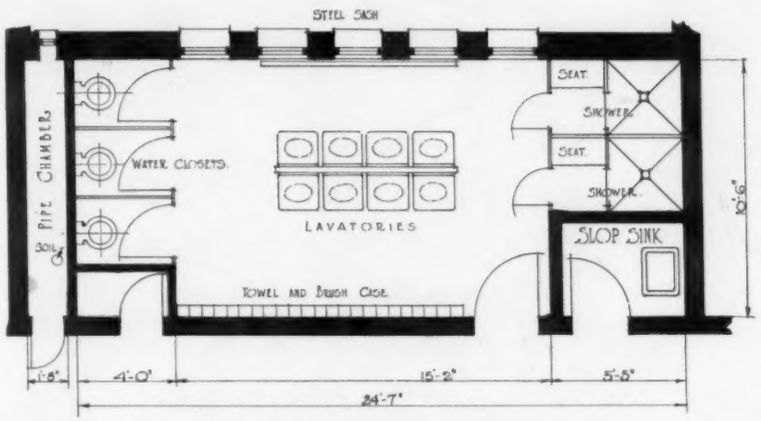


Fig. 4. Practical Arrangement of Toilet Fixtures

The shower for boys may be an overhead or side type of shower. If an overhead type, it should be low down, as a high shower might have too much force for a child's head. For girls' use the side shower is preferable.

It is important to have the shower control well placed, that is, at the side of the entrance. The control valve should by all means be an anti-scalding valve. When the valve is placed at the entrance, the child can test the temperature of the water before bathing. A curtain of white linen or other washable material at the shower enclosure is desirable. It is light and easily washed and hung on nickel-plated rings.

The bathtubs should be few in number. These are used generally for bathing the youngest children, or for any of the children who prefer the tub. The matron usually has charge of bathing the younger children, and it is well to raise the tubs so that the rim stands about three feet above the floor. This will make it much easier for the matron, as her position can be more erect. These tubs may be placed in a separate bathroom or in the general toilet room.

The lavatories if placed in the center, or at least away from the walls, will be found very convenient from the standpoint of sanitation. The grouping of the various connections facilitates repairs, cleaning, and eliminates the possibility of vermin, such as occurs sometimes at wall-hung lavatories. There are a number of types of lavatories on the market, having the cast-iron leg enamelled, which are very substantial.

Another good method for grouping of lavatories is shown in Fig. 4, which is a suggested toilet room arrangement. The floors are of terrazzo and the same material is brought up to form a wall on which the lavatories are hung, the height of same above the floor varied to suit the heights of the children. The water supply and the waste are carried through this wall longitudinally with proper drain and at the ends are located shut-offs for the water supplies on each side, and also clean-outs for the run of waste. The matter of shut-offs and clean-outs is of great importance, as children are careless in their use of fixtures. The waste clean-out should be given particular attention in the girls' cottages, for they are frequently stopped up from hair being washed down. This is by no means deliberate on the part of the girls but is a natural consequence from the use of the lavatory. The lavatories should be fitted with easy spring self-closing faucets of a high-grade quality. Children are careless about letting water run and often neglect to shut it off when bowl is full.

Slop sinks conveniently located on each floor are indispensable. A closet of good size, large enough to hold several brooms, dust mops, cloths, etc., together with the slop sink, will be found a great convenience. If the floor is of concrete, tile or some other permanent material, it will prevent its becoming foul from the dampness of the cleaning rags, mops, etc.

Drinking fountains are a convenient accessory. One should be located on the first or ground floor, for the children when running in from play. Another should be on each of the bedroom floors, centrally located with reference to the bedrooms, as most children are thirsty at bedtime and during the middle of the night. An abundance of drinking fountains around the institution conveniently located will be an inducement for the children to drink more water, an essential to good health.

Some provision should be made for the toilet articles belonging to each child, such as hair brush, comb, tooth brush, soap dish, drinking tumbler (aluminum), face cloth and towels. These should each be given an individual compartment of some sort. The towels and face cloths should hang apart from each other to prevent the spreading of any skin disease that a child might contract.

The compartments for these articles should be so designed as to provide good air circulation. In conversation with a physician connected with a chil-

dren's home recently, he suggested that all such articles be hung in a place where they would be subjected to sunshine during a part of the day, for as he said: "Sunshine is the best disinfector in the world." This would be quite ideal, but is rather difficult to work out in the plan.

KITCHEN ACCESSORIES AND PLUMBING.— Probably no part of the cottage plays so important a part in the education and training of the child as does the kitchen (this is especially true of the girls). Every kitchen is a school in itself. Where the cottage system eliminates the servant, the child consequently is given a regular, responsible, domestic training. A well equipped and conveniently planned kitchen and pantries are a great asset, not only for the teaching of the child, but for the quick preparation and ending of the work in connection with meals.

A kitchen planned on the buffet type or with cupboards in the pantry are both good. In the design of work tops, tables, etc., the architect should keep in mind that all heights should be reduced somewhat from those ordinarily provided for adults. Drawers, cupboards, bins, etc., all worked out in detail for the placing of kitchen utensils, aid in the training of the child. "A place for everything and everything in its place," is an expression well applied to a kitchen where children are trained in the science of cooking.

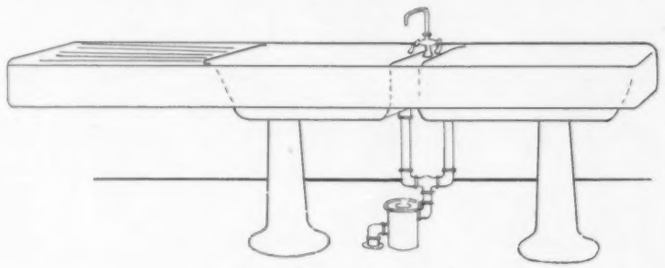


Fig. 5. Dishwashing Sink

Bread being the chief article of diet for children, an item of importance in the pantry is a well designed bread cupboard, air and dust tight, and with provision for proper ventilation to regulate the humidity. It should be metal lined, and have metal shelves, which are removable so that it may be washed and scalded. The bread cupboards should be properly proportioned to hold enough bread for a two days' supply. A cake cupboard of the same construction will be found useful, but should be of smaller proportions. A cutting board or ledge top should be provided near by for the cutting of bread and cake.

A cooler for "leftovers" (in the language of the housewife) may be built in to match the balance of the cupboards of the kitchen or pantry, and should be located on the cool side of the house and properly insulated. A vent should be provided at top and bottom and properly screened. The inside dimensions may be about sixteen inches square with some five or six adjustable shelves inside after the manner of the house refrigerators. The shelves should be of perforated metal, wood slats, or wire, all capable of being removed for cleaning. Some of the various manufacturers of refrigerators provide heavily tinned wire shelves on order, to fit such coolers, that are a distinct advantage because of their durability and the chance for air circulation around the food.

The range, if it burns either coal or wood, is better to be "bricked in" with a ventilating hood overhead. Fireproof floor material around the range is a safeguard where children do the work; the removal of hot ashes has its dangers. A metal ash chute to the basement would be advantageous. If electricity at a reasonable rate is available, the electric range will be found far superior.

A table in the kitchen, of proper proportions, with large wheel casters will be used constantly for the placing of dishes removed from the dining tables, and for the serving of prepared food. A favorite material for the tops of such tables, work tops, over cupboards, etc., is birch. Left in the white, it is easily scrubbed and kept clean. The use of linoleum of some light solid color on the tops of tables, work ledges, etc., will be found very satisfactory. It is impervious to moisture, cannot be stained with grease, oils or hot pans and is easily cleaned.

The kitchen floor is always an important detail. A good grade of linoleum seems hard to excel. Where the building is of fire-resisting construction, the ideal (if linoleum is used) is to cement it to the smooth trowel finish of the floor slab. A base of some permanent material in conjunction with the linoleum and a cove at the junction make an easily cleaned angle.

A vegetable sink and potato peeler for the kitchen will be found great time savers. The vegetable sink will be found particularly useful if vegetables are brought in fresh from the garden. These usually have a great deal of dirt to wash off, and a sink with a generous clean-out in the trap will be necessary. The potato peeler (rotary type) will pay for itself in a short while. It is found in institutions where children do vegetable peeling, that they waste a large percentage of the vegetables in the peeling unless carefully watched.

In planning the kitchen, it is well for the architect to keep in mind that there will be at least twenty-five per cent of the children preparing a meal at one time, and it is essential to have the kitchen well studied out for ease of serving, and good floor circulation around and in front of all fixtures.

The house should have a refrigerator, the size depending on the capacity of the cottage. Any of

the various types on the market will be found satisfactory. The " built in " type is of course better, for it eliminates the open space underneath, and usually has a permanent plumbing connection. If the drain is connected to the plumbing permanently it should be arranged without a trap and run to some basement floor drain for cleaning out. The steady, slow drip of melting ice forms a thick clot of scum in most refrigerator drains and this must be cleaned out often.

The ice capacity of the refrigerator should be from one hundred to two hundred pounds, depending on the method of ice supply and the size of the cottage. For a cottage of twenty children, a refrigerator of about one hundred and fifty pounds ice capacity and a capacity of twenty-five to thirty cubic feet in the food storage compartment will be found adequate. The door for icing, whether the refrigerator is " built in " or not, should be kept low because the icing may be done by boys who cannot lift as high as an adult.

The sink for dishwashing and general use is the most important accessory in the kitchen. It should be a sink to allow at least three or four to work together at one time. This is important in washing dishes. The writer believes that a sink placed away from the wall so as to be accessible from both sides is an improvement over any type of wall sink. The washing of dishes in a children's institution takes a great deal of time, and the more children put on the work the quicker it is finished. A sink especially designed with two compartments and made of sheet metal, preferably copper or zinc or, better still, enameled iron, each compartment having its hot and cold water supply, should be made six to eight inches deep and have a drain board of good length at one end. This allows one child on each side to wash dishes, and as many as three standing on each side drying. The accompanying illustration, Fig. 5, is a suggestion for this type of sink.

The kitchen should be well ventilated by generous windows from at least two sides and ventilation from three sides is preferable.

The matron should be provided with a private sitting room. This should be made as pleasant as possible and so situated that she can see to advantage the grounds in front of the cottage. Her private toilet and a coat closet could be in connection therewith. It is almost necessary to have a door from this room leading directly into the living room, so that she may observe the actions of the children. The room would also be well placed if it were near the front entrance to facilitate the answering of front door calls.

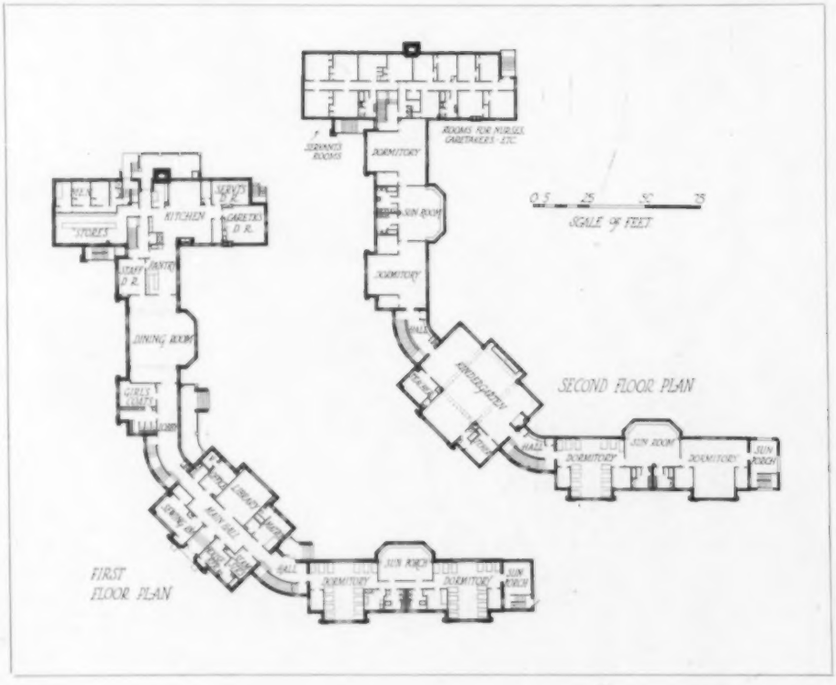
Sewing Room. — In the girls' cottages particular attention should be given to a sewing room, well lighted and large enough to hold several girls. In these cottages the girls will most likely be given a good deal of instruction in sewing, unless it is done in another way, possibly at the school maintained by the institution. There should also be provided a sewing room in the boys' cottages for the use of the seamstress and matron in mending.

Rear View of Chicago Nursery and Half Orphanage Asylum, Chicago, Ill.
Holabird & Roche, Architects

Chicago Nursery and Half Orphanage Asylum, Chicago, Illinois

HOLABIRD & ROCHE, ARCHITECTS

General View of Street Fronts



THIS building, though not of the cottage type considered in the previous article, approaches the desirable results of that type through its well conceived plan. It is fortunate in having a generous plot enabling the building to be disposed so as to take full advantage of all possible sunlight and also good natural ventilation, because the depth of all portions is kept at a maximum of two rooms. A special feature of the plan is the combination of dormitories with sleeping or sun porches, and the mingling of single rooms for attendants other than those in the caretaker's wing. The entire group includes a separate heating plant and a cottage infirmary with isolation wards for both boys and girls.

The Promotion and Financing of Building Operations

A BRIEF CONSIDERATION OF ACCEPTED METHODS AND THEIR CONNECTION WITH ARCHITECTURAL PRACTICE

By CHARLES A. WHITTEMORE

AMONG the multifarious duties of an architect that of financial expert and adviser frequently is of not the least importance. This is attributable, undoubtedly, to the fact that so many real estate operators who are undertaking projects of considerable size realize that an architect is not only competent to plan and construct the building but many times is able to give good, sound, practical advice on the subject of financing. Frequently, also, through his clients or acquaintances the architect is able to establish a financial relation between the prospective owner and some financier or underwriting medium which makes the consummation of the project possible.

That financing is one phase of the ever increasing obligations of the architectural profession is evidenced in many ways. Various societies of architects have sought to instruct the laity as to the qualifications of an architect as well as the character of his services, and have included " financing " in the list of activities which are a measure of real ability and an indication of the broad scope of requirements of the profession.

A well trained architect, as has been intimated so many times, is not merely a maker of pretty pictures and a fanciful schemer. He is a man with a logical mind, of vivid and active imagination, a competent executive and administrator, with ability to handle men. His training so quickens his perceptions that he is able to see in a preliminary scheme an accurate view of the completed project. His familiarity with big business and with large developments is productive of a real " money sense." He knows the value of money and knows how to value it not alone for its purchasing power but also for its potential power. Unfortunately, however, not all the members of the architectural profession can measure up to this standard. Some of the architects of the country have not had opportunities to become thoroughly familiar with the problems of finance and promotion operations. The coming years will undoubtedly develop many situations in which an architect's ability to assist in financing various problems will be called upon in a greater degree than ever before. It, therefore, seems wise to put down a few of the cardinal principles and a few of the usual forms of financial undertakings which are more or less directly connected with architectural problems.

It is not with the idea of preparing a " financial primer " nor with the idea of presenting facts which may be entirely new that these words are written. It is primarily for the purpose of calling once more to mind certain phases of one of the most important, but least understood, functions of the architect.

Familiarity with financing methods is important. As a latent power it may be classed with a knowledge of " graphical statics " or calculus. It may not be called into direct action, but if the call comes and the response is intelligent the effect cannot be otherwise than a distinct help, not to the individual alone, but to the whole profession.

A diversified knowledge is a component part of a liberal architectural education. The eyes of the world will inevitably turn to the architects for help in many enterprises, which now are conducted through other channels, as soon as the extent of the ability of the profession is realized. It is lamentable, though true, that many architects are " hazy " even on the subject of the simple first mortgage.

There is probably no one in the profession who is not familiar to a degree with the financial questions involved in the construction of the modern small house, but it is a fact that many architects would be somewhat at a loss to take the most direct and shortest steps to approach even the placing of a first mortgage.

Mortgages are nothing more nor less than promissory notes and in some states the generally accepted term is " mortgage note." A mortgage is simply a statement or conveyance on the part of the owner of record of a piece of property that because of money advanced, the deed and title to land or building are offered as an assurance that the borrower will pay the full value of the loan with interest at fixed intervals, or at a specified time on demand. Usually the mortgage is for a term of years and is subject to renewal at the option of the mortgagor. In case of non-payment the mortgage may be foreclosed and the title to the property passes to the mortgagor.

When a first mortgage is to be obtained from a bank an application must first be filed. This is turned over to the finance or investment committee of the bank and an examination of the property is made by them. This committee reports to the directors of the bank, who may pass or decline to place a mortgage on the property in question. The bank in conducting an examination of the property also looks up the deed to see that there are no prior encumbrances and that the title is clear. If the mortgagee has had the title examined and guaranteed by the Land Court a further examination by the bank is not necessary.

First mortgages are usually based on sixty per cent of the value of the property (land and buildings) although sometimes a greater amount is accepted if the security is exceptionally good.

The first mortgage is not the limit of liability on a piece of property. Second mortgages are common

in large undertakings and even in the financing of a small house. Third and fourth mortgages are also occasionally recorded, but are not so frequently encountered on small operations except under stress of financial need.

It is obvious that the greater the number of mortgages on a piece of property the less the owner's equity. The mortgagors, after the first mortgage has been placed, become practically endorsors of the note on the first mortgage. In other words, they also assure the holder of first mortgage that the loan will be repaid with interest. The holder of the first mortgage has the first claim on the property and in case of foreclosure the holders of other mortgages in order to protect themselves must either bid in the property or must arrange that the portion of the principle demanded with interest be advanced. If such advance is not made and the price realized on the foreclosure sale is not sufficient to cover more than the first mortgage, then the second mortgage and subsequent mortgages become valueless.

Frequently second mortgages are purchased on property as a tentative ownership because the holder of the second mortgage is really placed in the position of owner, as has been outlined above. In many building operations on a small scale second mortgages are taken in payment of contractors' bills. For example, if the land be worth $1200 and the house costs $6000, a first mortgage of $4320 or sixty per cent may be advanced by a bank or private individual. The contractor, in settlement of his account, may take a note or second mortgage on the property for a part of his balance due. Very frequently in buying a piece of property on which a first mortgage is placed the purchaser will assume the obligations of the first mortgage, make a partial payment of the balance, and the former owner take back the difference between the cash paid and the cash due in the form of second mortgage.

The second mortgage is also used to conceal ownership. For instance, in a large real estate transaction where the real owner wishes to remain out of record, the title to the property may pass to a "straw man," a clerk or a broker whose business it is to fulfill this particular office. His name will appear on the records as owner, he may be the mortgagee on the first mortgage, but in order to finance the operation he simultaneously issues a second mortgage to him who is the real but hidden owner. Such a piece of property cannot be transferred without the consent of the holder of the mortgages. The accounts of real estate transactions all contain many instances of this type of operation. It is a fact that one of the largest owners on record in a certain city, and one who nominally pays a property tax well along towards the top of the list, is a lawyer of no large means.

Second mortgages are frequently used in cases of direct fraudulent intent. The modus operandi is simple, although at times disastrous to the holder of the first mortgage and to insurance companies.

A discussion of this phase of financing might be of interest but would not be of value at this time. Architects as a rule do not figure in these transactions first, because of the questionable practice, and second, because the "trick" is turned only in instances of relatively small operations.

First mortgages on real estate are given by savings banks, coöperative banks, trust companies, life insurance companies and frequently by private banking corporations or private individuals. The coöperative bank form of financing the small house is generally satisfactory, as the payments are made in small amounts and over a longer period than in other bank mortgages.

A coöperative bank issues shares which bear an interest rate according to the bank earnings. These shares are issued in $1 to $25 units. The shares theoretically mature in twelve years, but if the bank earnings are good the maturing period is shortened. When the coöperative bank issues a loan against a projected building, shares are issued in an equal amount, the loan becoming a lien against the shares. When shares mature the loan is cancelled. The interest on the loan must be paid monthly with the regular share payment.

By this method the mortgagee is in a position to reduce the mortgage gradually without any large payments. Many homes have been financed in this way which could have been possible in no other manner except with considerable difficulty.

First mortgages placed other than through coöperative banks are usually issued for a period not exceeding five years and are then callable or may be renewed at the pleasure of the mortgagor. Banks usually will renew a mortgage, or rather issue a new one on expiration provided a portion of the principle has been paid and provided the property has not depreciated to any considerable extent.

The underlying principles of first and second mortgages are the same as the underlying principles of financing on larger schemes. The first mortgage, for example, is analogous to the bonds issued on a large transaction and the second mortgage may be compared with the preferred stock.

The subject of bonds and stocks is complex and one which can be thoroughly understood only after considerable study. There are many varieties of bonds, some of which the average architect would never be interested in so far as the financing or promotion of his projects are concerned. Such bonds are more in the nature of public service, railroad or industrial bonds of a different character than original financing.

The bonds customarily dealt with in the building and real estate operations are roughly divided into two classes, term or optional bonds and serial bonds,

the difference lying in the fact that the term bonds are in force for a definite period of years, but may be retired at a premium rate established in the agreement, usually after a fixed interval, as after one year. Serial bonds are divided into classes or series which must be retired as a whole at certain specified times.

It may be worth while to note that the average investor in bonds prefers bonds of a twenty to thirty-year term on real estate promotion. These investors usually are bankers or trustees of large estates, or individuals having faith in the project and considerable available money.

The disposition of bonds is not the most difficult part of the financing because these bonds, if the security is good, are usually underwritten by a banker or broker, who in turn sells to the individual investor.

The second mortgage or preferred stock is usually the most difficult to place, although if business conditions at large are in good shape and money is plentiful with no extravagant rates of interest, preferred stock in good enterprises is an exceedingly safe investment. The common stock usually represents the bonus as added incentive to the preferred stockholders and also the remuneration to the promotors. In many instances in large financing the common stock is given to preferred stockholders in the proportion of one share of common free with every block of two shares of preferred purchased. It is also quite customary for the real estate operator, the contractor, the architect and others interested in the operation, to accept some common stock as part payment for their services.

Usually the common stock represents the voting power of the corporation or trust. The subject of voting power is so varied that a complete discussion would be out of place in an article of this character. Sufficient to say that the common stock is the source of the larger returns if business is good and therefore should have general control of the personnel of the organization.

The income from the preferred stock is always guaranteed at a fixed percentage and is frequently set at seven per cent, which makes an attractive return on money invested. The common stock has no guaranteed income, as it derives its return from the net earnings of the operation.

In connection with the financing of building operations there are many items to be carefully considered. The expense of underwriting the bonds, the discount for placing the preferred stock, the interest on both bonds and stock and other fixed and carrying charges all must be capitalized as well as the cost of land and building. The taxes, insurance during construction, trustees' fees, brokerage commission are also as much a part of the total cost as are plumbing fixtures and electric wiring. It is imperative that these items be also capitalized.

In determining the amount of money available an itemized list showing all the expense factors should be made up. As an illustration we may assume a building to be built and investigate the balance sheet such as would be prepared for promotion purposes.

A real estate operator has in mind a parcel of land in a location which he thinks desirable for an apartment house with an opportunity for some attractive stores in the first floor, — such an operation is feasible in certain locations, particularly if the possibility of later change to an office building be kept in mind.

The real estate operator asks an architect to prepare sketches and a financial statement. The project is to be kept within a limit as near $500,000 as will be feasible and still show a good return.

The architect would then prepare a statement similar to the following:

Land	$125,000
Building, including architect's fees	280,000
Bond interest	13,500
Stock dividends	11,000
Bond discount 5%	15,000
Stock discount 15%	30,000
Trustees' fees	3,000
Taxes and insurance	3,000
Promotion charges and incidentals	19,500
	$500,000

It is assumed in this case that the bonds may be floated on the basis of security of investment and increase in land value to the amount of $300,000. This is not an extraordinary loan on a proposition of this character, although it is not so frequently encountered as a loan of 60% to 70%, as has previously been noted. Inasmuch, however, as the figures used in this statement are actual figures used in connection with a real development rather than a purely hypothetical statement, the exact basis of percentage of bond issue will be taken rather than the 60% or 70%. The bond issue was $300,000, the preferred stock issue was $200,000 and the common stock issue was $150,000. This common stock was given one share with every five shares of preferred stock.

In the above statement it will be noted that the bonds are estimated as bearing interest at 4½%, while the preferred stock is estimated as bearing interest at 5½%. The bonds also have been underwritten at a discount of 5% from their par value, making a broker's price on the stock 95. The brokers would of course obtain their profit in the transaction by selling these bonds at, say, 97. The preferred stock is underwritten at 85 instead of par value 100, with the idea that the brokerage commission would be obtained in selling the stock at a higher valuation, probably at par.

Another item in the statement above is that of promotion charges. This would include the brokerage commission on the sale of the land and a small bro-

kerage commission for securing the underwriting of the stock although, as has been noted, the actual profit to the underwriters has not been estimated in the promotion charges.

One question which will undoubtedly immediately occur to those unfamiliar with this form of financing is how the amount of bonds and stocks to be issued is determined. This item depends entirely on the capitalization, for example, if the total capitalization were assumed to be $600,000, the bonds probably would be issued in amount of $400,000 and the stock on the basis of $200,000.

It will also be noted that the common stock in this particular operation was not figured in as part of the capitalization, but represents a bonus or a treasury stock which can be sold in case of a contingency arising increasing the cost beyond the original amount of capitalization.

After having determined the amount of capitalization necessary the bond and stock issues are worked out, the interests and discounts are computed and the other items of expense estimated. If the total sum of these items exceeds the amount originally set aside for capitalization (in this case $500,000) then the bond or stock issue is increased or the other expenses in some manner decreased. It is obviously a question of "trial and error" until a balance is had.

The next step in the computation of the operation is an examination of the income. In this particular case we assume eight stores of a high class in the first floor of the building. We assume that these eight stores would be rented at a fair rental, say approximately $4.50 per foot. This price per foot is low, but in promotion enterprises all items of expense should be figured conservatively high and items of income figured conservatively low. We assume that the average annual rental of these stores would be $3000 apiece.

There are also in this building nine floors of apartments with nine apartments on each floor, making a total of eighty-one suites. These suites vary in size and the average income would be $700 per year. The income statement would be as follows:

Income 8 stores at $3000	$24,000
9 floors, 81 suites at $700	56,700
Or a total income of	$80,700

These items of course are checked up by the real estate operator because of the knowledge of land valuations, demands for stores, possible development of the neighborhood and character of the surrounding business and apartment buildings. If the developments in the vicinity are tending in the direction of better-class houses the income will obviously increase and in the years after the operation has been completed and the building occupied, the income sheet will show a larger rent return than that considered likely under the promotion estimate.

Under the expense account must be included all the heat, light, water, elevators, janitor service and all of the other items which enter into the operation of a building of this character. Also there must be included the annual interest on bonds and stocks, the trustees' fees, insurance, taxes and a sinking fund. After these items are totaled the difference between the total expense and total income represents the item which may be set aside for common stock dividends or purchase of preferred stock.

In the case of a development such as a hotel the preferred stock usually is, as has been already explained, the stock representing the ownership of the property. This stock is obviously desirable on the part of the hotel proprietor if he is thoroughly confident of the future of the operation. Many times, therefore, in financing hotel operations the clause is made in the agreement that no dividends are paid on the common stock until a certain proportion of the preferred stock has been retired. The financing of a hotel is so different from the financing of apartment houses that it is not desirable at the present time to go further into this phase of the situation.

The expense sheet of the apartment house previously referred to would be as follows:

EXPENSE AND MAINTENANCE

Heat, Light, Water, Elevators, Janitor, Vacancies, Renting, Repairs, Depreciation, Sundries	$32,280
Interest bonds 4½%	13,500
Interest stock 5½%	11,000
Trustees	5,000
Insurance	3,000
Retiring bonds	7,000
	$71,780
Common stock dividends	8,920
	$80,700

The bonds are usually retired by the establishment of a sinking fund on a 2% or 2½% basis, that is, 2% of the value of the bonds issued is set aside every year to accumulate interest for the purpose of discharging the first mortgage obligation. This item is important but, however, is frequently overlooked in financing work. Usually the financing agreement contains a clause as to the retirement of the bonds by application of the proceeds of the sinking fund in whole or in part. This reduces the first mortgage obligation and increases the value of the common stock in that the surplus is increased

because of the lesser interest to be paid on bonds.

It is frequently estimated that after a period of five years the common stock begins to have a far better interest bearing rate than the guaranteed interest of the bonds or the preferred stock.

It may also be well to explain the item of trustees' fees. This occurs both in the capitalization and in the expense. The trustees of the corporation or real estate trust conducting the operation are the men on whom the burden of the whole proposition falls during the period of construction. They are the ones to look out for the proper placing of bonds and stock and for the making of various contracts, leases, etc. Therefore, during the period of construction their expenses become an item of expense of construction, so that their charges must be capitalized.

After the building has been completed and occupied the trustees theoretically operate the real estate. They arrange for collection of rents, renewal of leases, for maintenance of building, etc., and at this period their charge becomes a part of the operation expenses.

It has been demonstrated by careful analysis of many buildings that the average expense outside of the bond and stock interests, the sinking fund and the trustees' fees, usually averages about 40% of the gross income. It is, therefore, customary in making up a statement to assume this figure. If the property is desirable, well constructed and rents well, the possibility of vacancies and depreciation will be decreased, but these items should be considered carefully and included in any expense account as covering contingencies which may arise.

The financial statement presented above is of one type of finance. This same general method is applicable to almost any kind of building, but with each different kind of construction such as theater, hotel and special enterprises there are also variations in the form of bonds and stocks issued as has been previously noted, and it will require a later paper for their consideration.

For the present, it is sufficient to call to the attention of the architectural profession the few items which have here been produced, not with the idea of instructing men in something that they do not already know, but with the purpose of bringing more clearly to mind the fact that as time goes on the practice of architecture becomes more and more complex and various problems are continually introduced which have not previously been encountered.

It is important, therefore, that architects should be awake to the possibility of securing proper recognition of their abilities and that the bankers, brokers and real estate operators should have a feeling of confidence in the architect's ability to correctly interpret the financial needs of an operation.

Dining Room in the House of Mrs. J. E. S. Hadden, Westbury, Long Island, N. Y.
Peabody, Wilson & Brown· Architects

Notes on Price Movements in the Building Industry

NO ANALYSIS of the price reactions since the signing of the armistice can be of any material value if the prices alone are considered. The prices of building materials have changed in many cases; some have seen a downward revision while some have seen a slight up-swing.

A comparative table of costs as of last fall and the present time would be so deceptive as to be dangerously misleading. If, however, we examine the general industrial conditions we find an almost universal optimism.

The consensus of opinion is that building will be brisk, that work will be plenty, and that prosperity hitherto unknown is knocking at our gates. There is a very general feeling that the transition to normal business conditions may be consummated without either a sudden drop in price level or a lower wage scale. If every one waits for lower prices, if every one insists on the same margin of profit as of recent years, if all architects and investors, bankers and contractors are pessimistic and slow in getting into action, then and then only will building be depressed, and the labor situation present tangible difficulties.

If the labor market can be stabilized and if the scale of wages which prevailed in 1918 can be used as a basis of estimate for the immediate future, a tremendous volume of new construction will flood the market and tax the ability of the manufacturers to produce the various building materials in time.

All prices involve a labor item. If this item be the unknown quantity, and contractors have no assurance of the continuity of any wage scale, prices are sure to indicate a probable rise rather than a decline.

Bids received on a number of buildings for the Government have exceeded appropriations by from 10% to 80%. This reflects the tendency on the part of the contractors to forecast higher prices for labor, especially where the contract is on the guaranteed amount basis. It is true that the appropriations were on a pre-war basis, but that in itself should not account for such a high overrun.

Many materials suffering from war restrictions, such as tile, clay products, terra cotta, brick, etc., probably will not show any appreciable price reductions until sufficient demand has been created to warrant resumption of former manufacturing capacity. During the war the demand for these articles, aside from the Government demand, has been little, if any, and as a result plants have depreciated and organizations become disrupted.

The lumber market has been firm and prices have as yet shown no decline. A drop may not be expected for some months. It is not certain, however, that contractors in estimating on construction will not quote prices lower than the market.

In the plumbing market it is interesting to note that fixtures have dropped 15%, brass pipe 10c per pound, brass fittings 10%, iron pipe 10 to 20%. These prices reflect a possible further discount for actual business. The drop is taken from the peak price of 1918.

In the field of heating and ventilating we find the following reductions on principal items: boilers 25%, radiators 25%, sheet metal 25%, iron pipe 7½%. Pipe covering dropped and rose again, due to an unprecedented volume of alteration work which is not ordinarily expected at this time of the year.

Electrical contractors have had reductions in wire 25%, conduit (carload lots) 5%, but other fittings, switches, etc., maintain the old prices. Estimates on construction work indicate a strong possibility of further reductions in the near future.

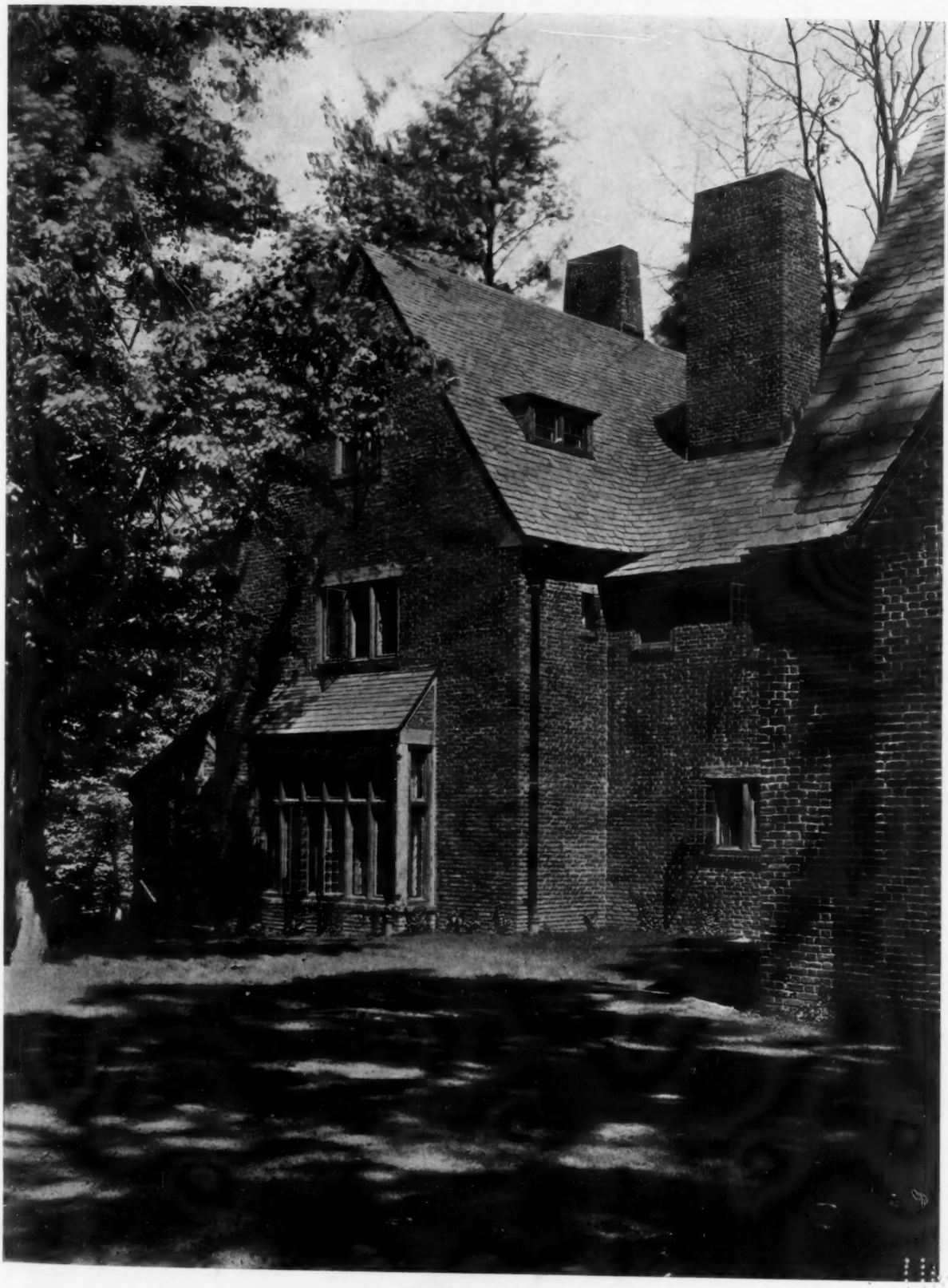
Masons' supplies have shown no general reductions, although cement has dropped from a peak price of $4.40 to $3.55.

Steel has dropped from 20% to 40%, while iron is holding firmly at the old 1918 rate. In general the tone has been one of firm optimism with reductions reflecting an easier market condition. Some reductions, however, have been bold bids for business with confidence in the volume of business to cover any possible excess of price cutting.

There is no doubt but that the general efficiency of labor is above the 1915-1916 level. The impetus given building construction by the war work for the Government; the spirit which filled the great majority of war workers; the need of speed coupled with good work, all have tended to make labor of more worth than in the pre-war period. If labor recedes to the work standard of 1915 the wage scale should drop. If labor maintains its present standard, and shows appreciation of today's demand for increased efficiency, the present wage, or even a higher wage, would represent a net gain to every investor. If labor working eight hours at $1 per hour produces more and better work than it did working ten hours at 75c the owner gains.

The duty of every architect is clear. He should at once bring to the attention of those contemplating construction the extreme advisability of preparing plans and specifications and securing estimates at the earliest possible moment. The conditions are now favorable but will rapidly change if every one waits until all projects are put on the market at once.

Owners and investors should also be reminded that the interval between the inception of a project and the awarding of contracts is the period during which any price change may be carefully studied. It is not possible to decide on a plan for a building and award a contract the next day. It is obvious also that in many instances the loss that is being sustained each day from idle capital and idle labor is far greater than any possible additional cost over pre-war prices.



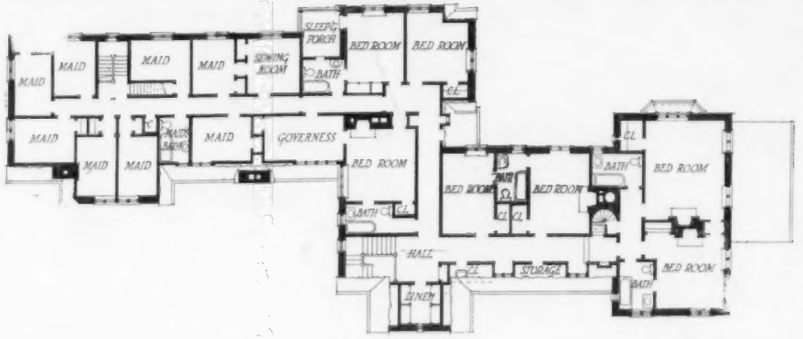
DETAIL OF LIVING ROOM WING

HOUSE FOR C. D. BARNES, ESQ., MANHASSET, LONG ISLAND, N. Y.

PEABODY, WILSON & BROWN, ARCHITECTS

ENTRANCE FRONT FROM FORECOURT

FIRST FLOOR PLAN



SECOND FLOOR PLAN

HOUSE FOR C. D. BARNES, ESQ., MANHASSET, LONG ISLAND, N. Y.

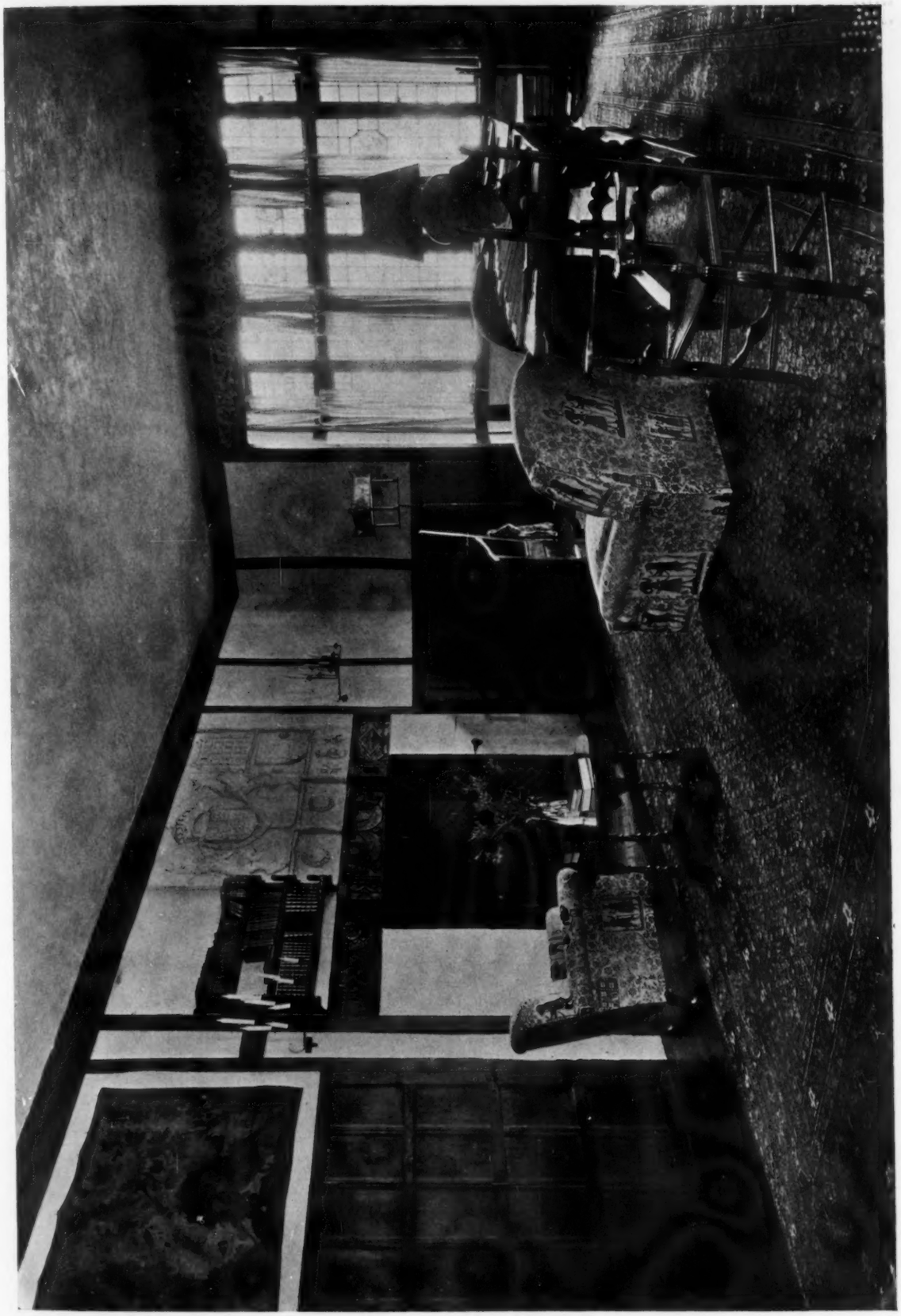
PEABODY, WILSON & BROWN, ARCHITECTS

VIEW FROM NORTHWEST

VIEW FROM SOUTHWEST

HOUSE FOR C. D. BARNES, ESQ., MANHASSET, LONG ISLAND, N. Y.

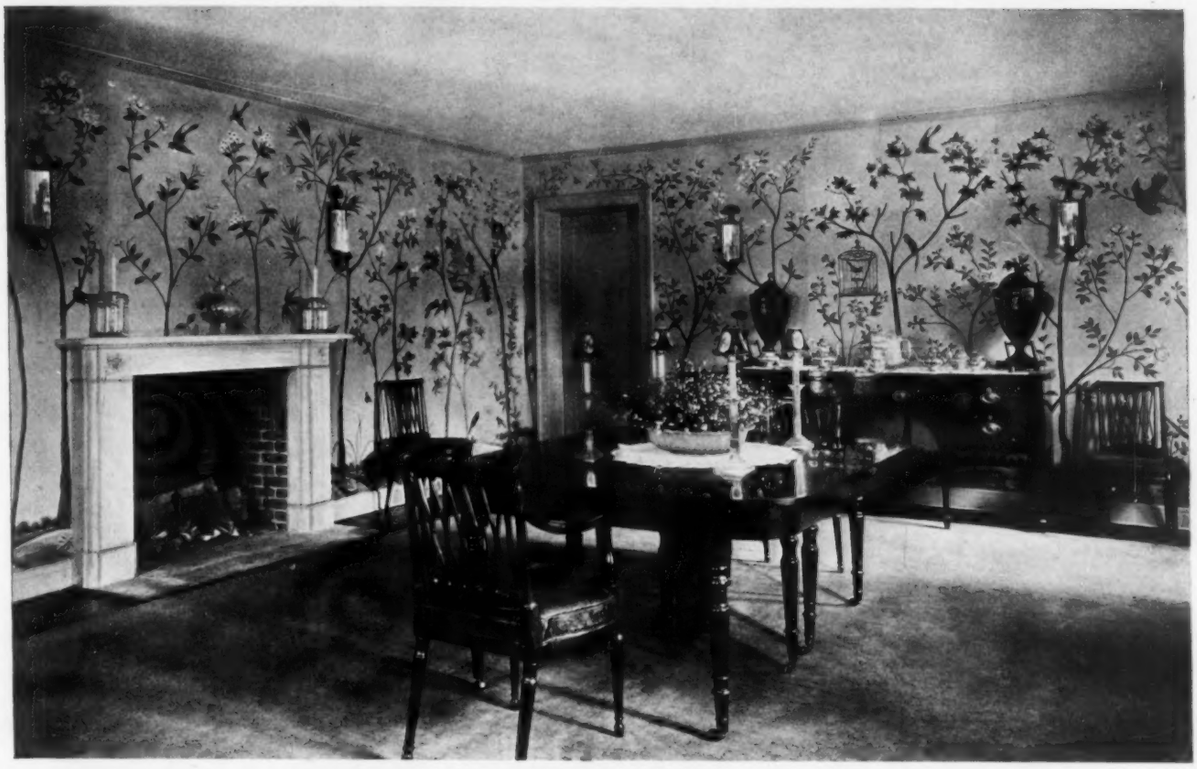
PEABODY, WILSON & BROWN, ARCHITECTS



LIVING ROOM

HOUSE FOR C. D. BARNES, ESQ., MANHASSET, LONG ISLAND, N. Y.

PEABODY, WILSON & BROWN, ARCHITECTS

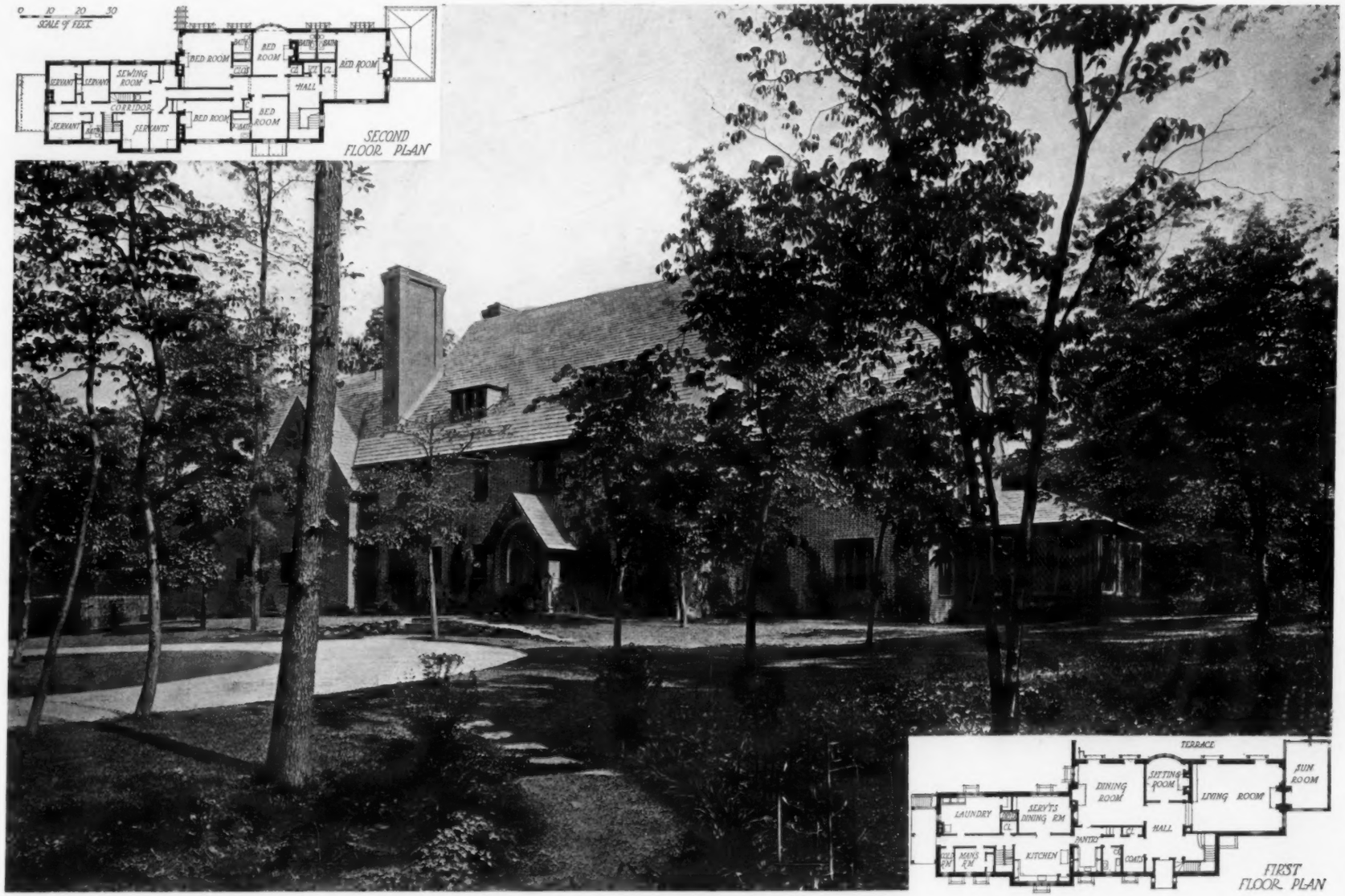


DINING ROOM

LIBRARY

HOUSE FOR C. D. BARNES, ESQ., MANHASSET, LONG ISLAND, N. Y.

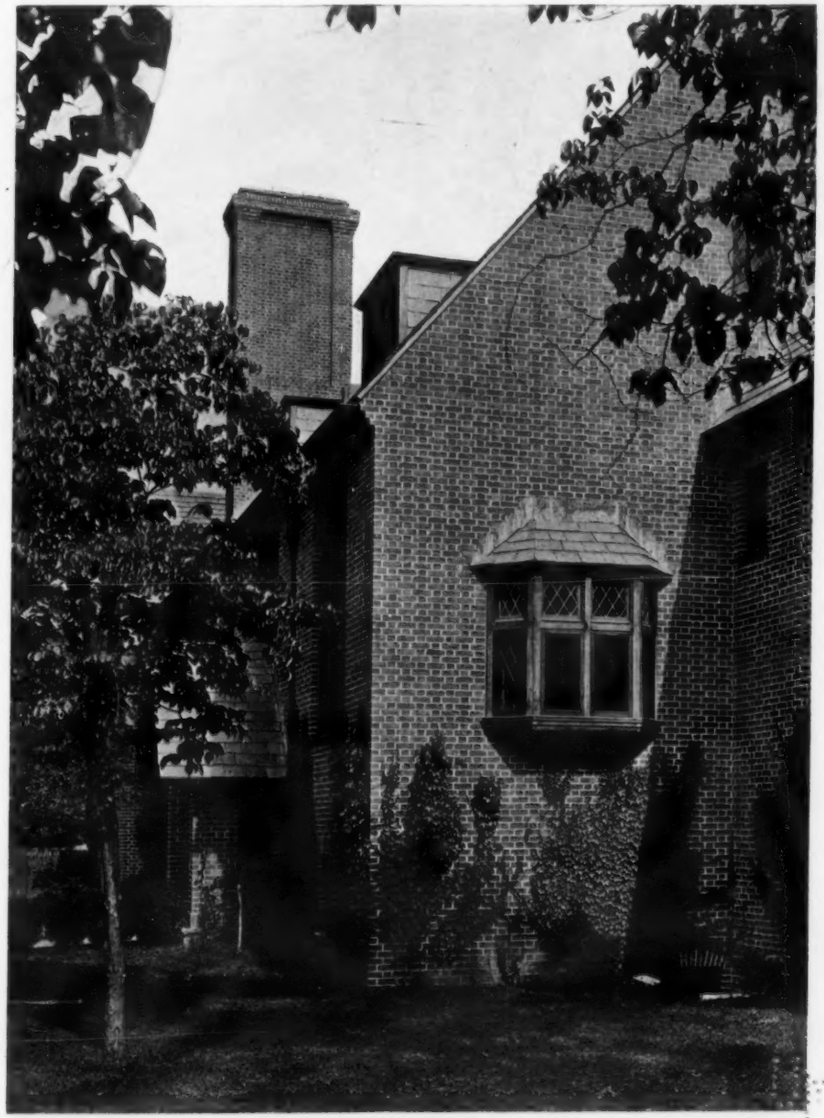
FEABODY, WILSON & BROWN, ARCHITECTS



GENERAL VIEW OF ENTRANCE FRONT

HOUSE FOR MRS. J. E. S. HADDEN, WESTBURY, LONG ISLAND, N. Y.

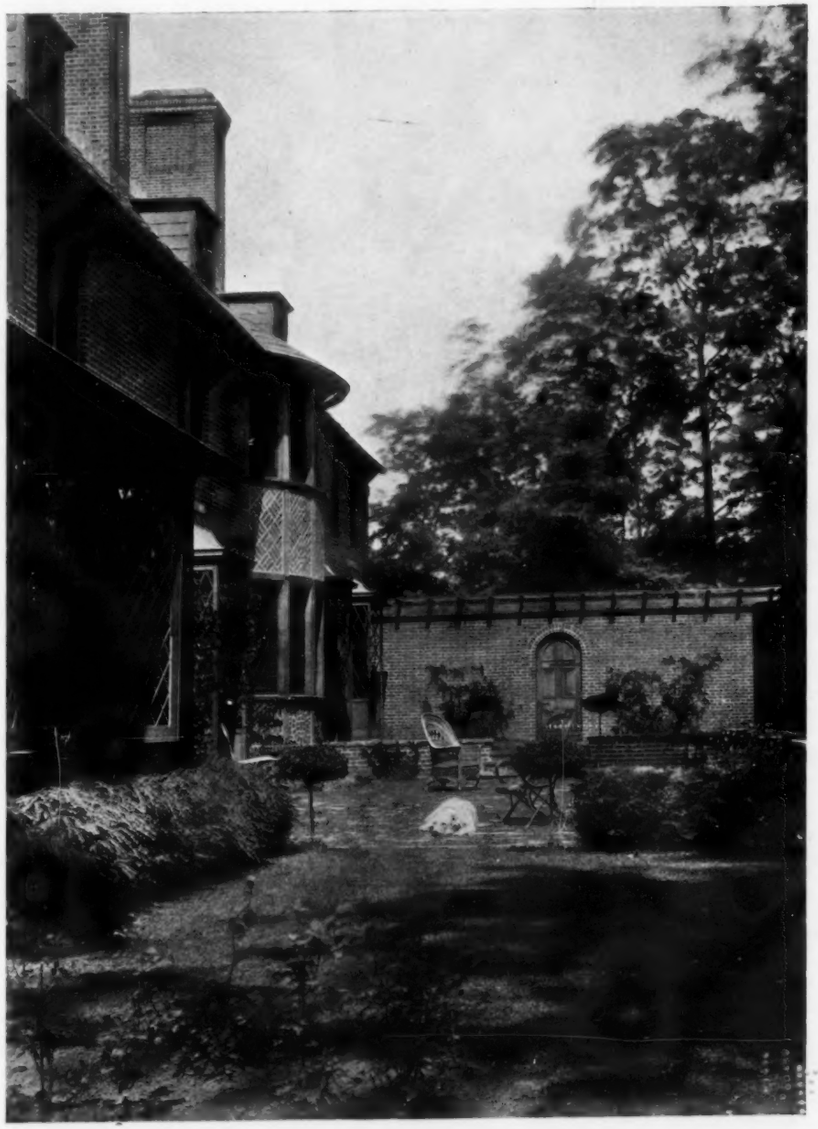
PEABODY, WILSON & BROWN, ARCHITECTS



DETAILS ON ENTRANCE FRONT

HOUSE FOR MRS. J. E. S. HADDEN, WESTBURY, LONG ISLAND, N. Y.

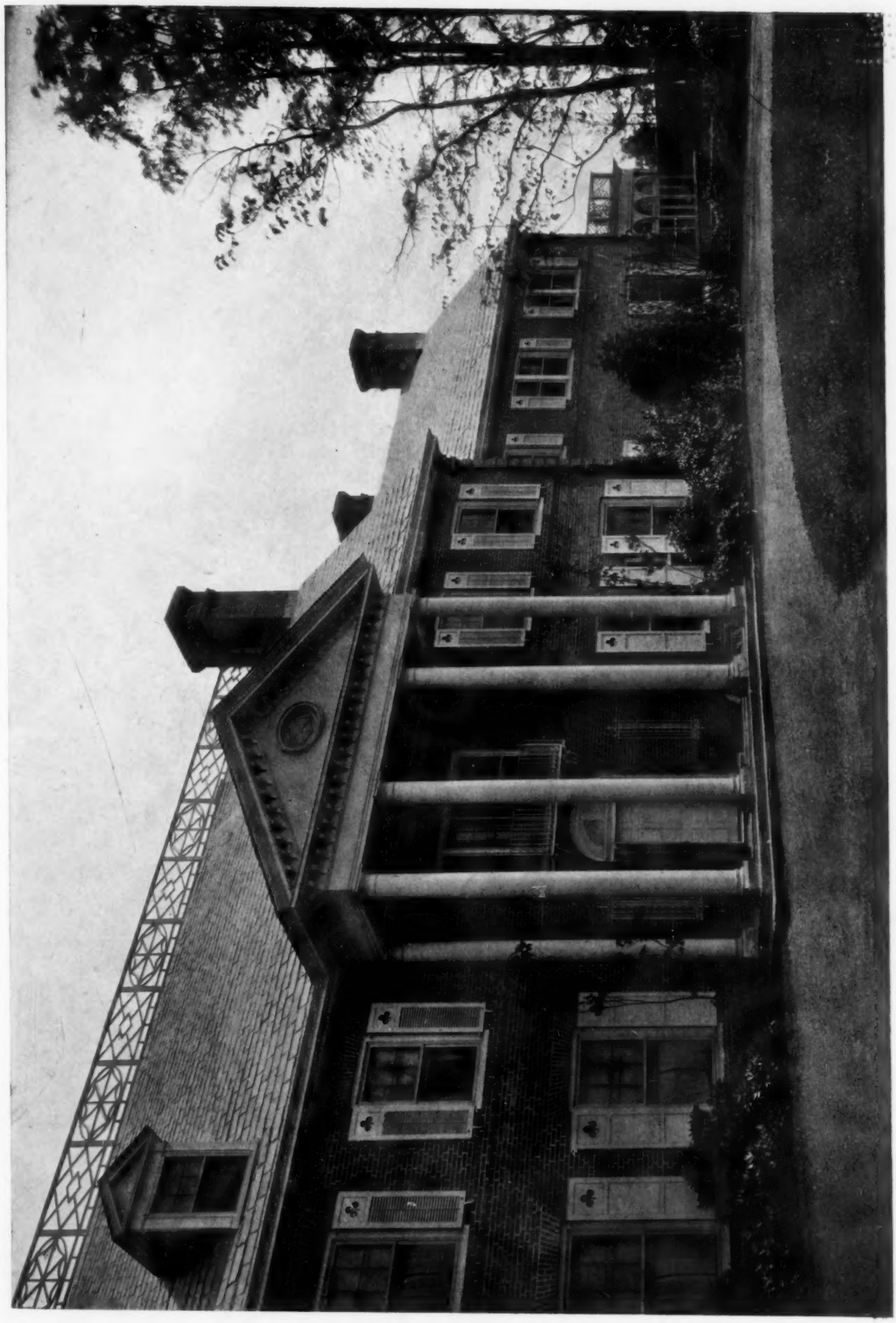
PEABODY, WILSON & BROWN, ARCHITECTS



VIEWS OF SOUTH TERRACE

HOUSE FOR MRS. J. E. S. HADDEN, WESTBURY, LONG ISLAND, N. Y.

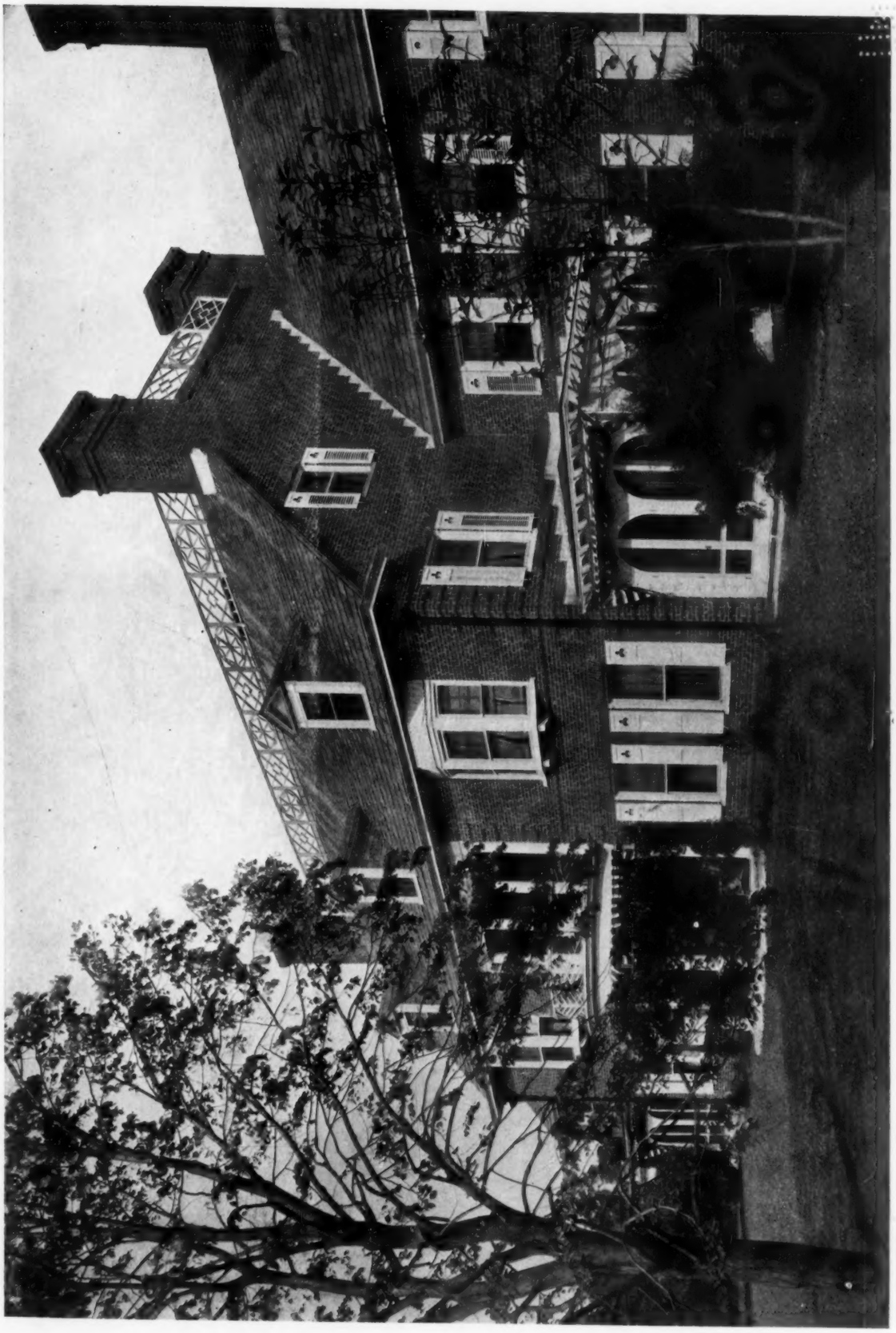
PEABODY, WILSON & BROWN, ARCHITECTS



GENERAL VIEW OF ENTRANCE FRONT

HOUSE FOR A. LUDLOW KRAMER, ESQ., WESTBURY, LONG ISLAND, N. Y.

PEABODY, WILSON & BROWN, ARCHITECTS

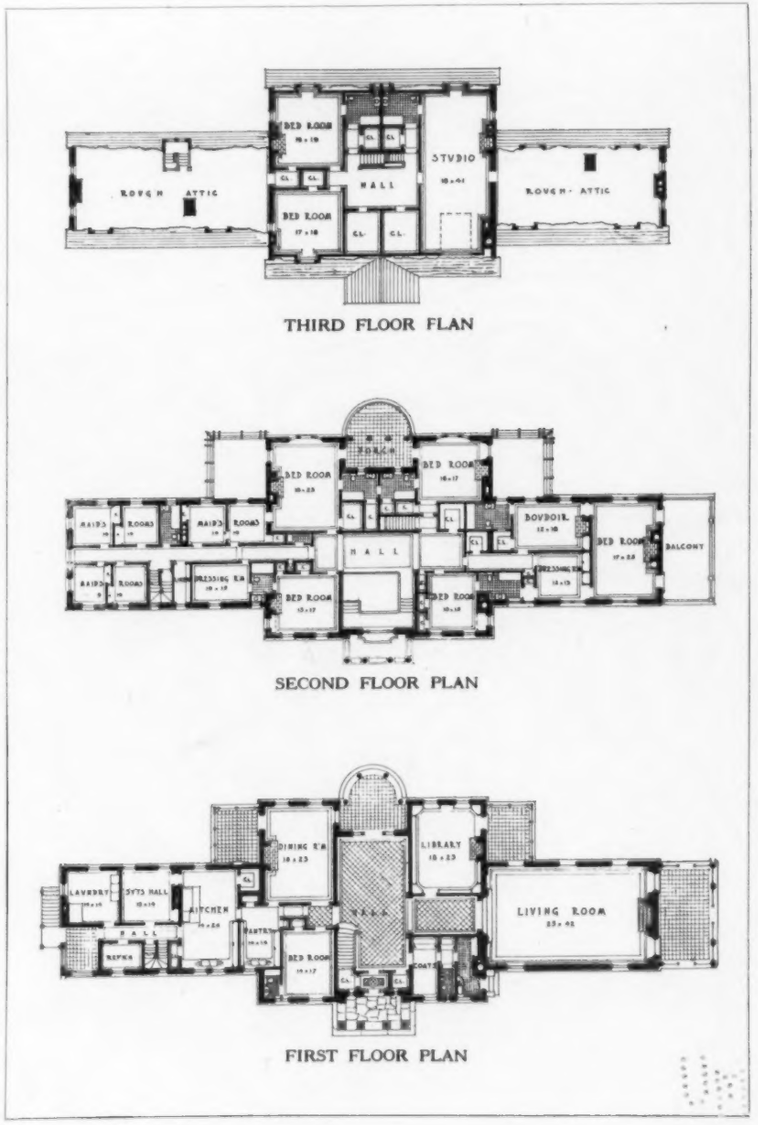


GENERAL VIEW OF GARDEN FRONT

HOUSE FOR A. LUDLOW KRAMER, ESQ., WESTBURY, LONG ISLAND, N. Y.

PEABODY, WILSON & BROWN, ARCHITECTS

ENTRANCE HALL AND STAIRWAY



THIRD FLOOR PLAN

SECOND FLOOR PLAN

FIRST FLOOR PLAN

HOUSE FOR A. LUDLOW KRAMER, ESQ., WESTBURY, LONG ISLAND, N. Y.

PEABODY, WILSON & BROWN, ARCHITECTS

DINING ROOM

LIVING ROOM

HOUSE FOR A. LUDLOW KRAMER, ESQ., WESTBURY, LONG ISLAND, N. Y.

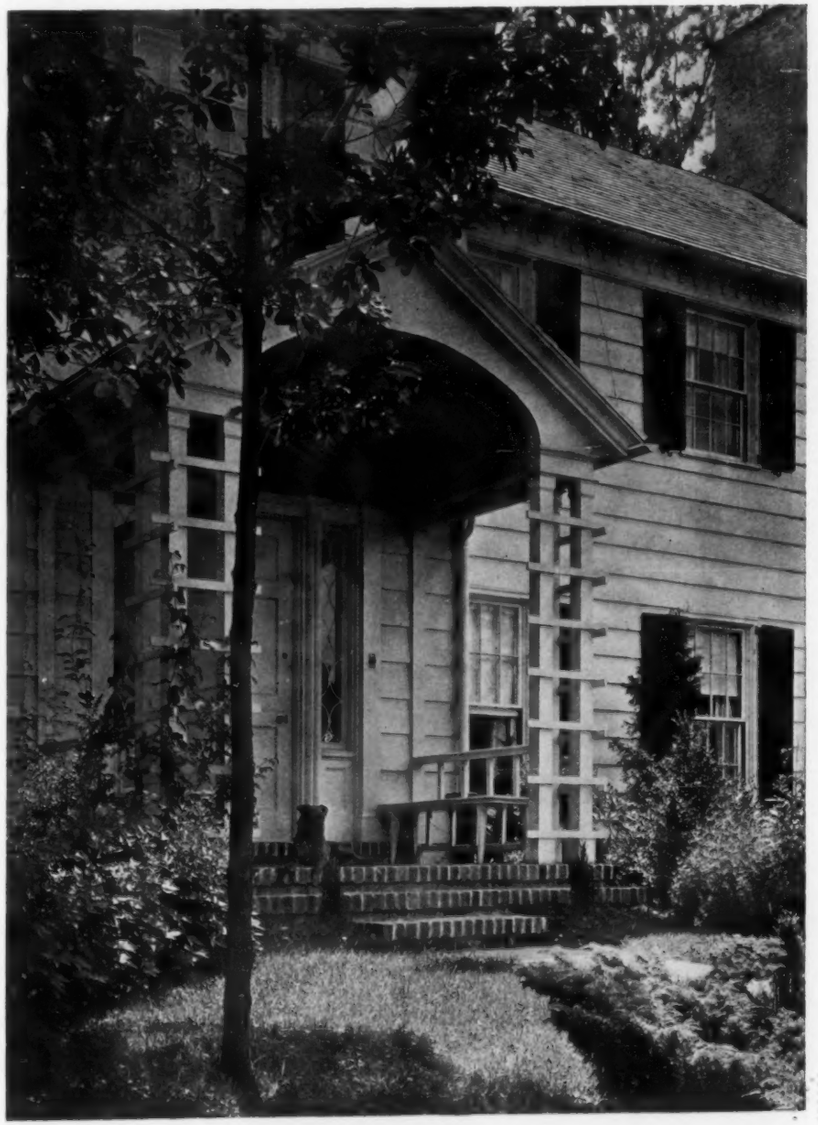
PEABODY, WILSON & BROWN, ARCHITECTS

GENERAL VIEW AND FLOOR PLANS

HOUSE FOR HUNTINGTON NORTON, ESQ., OYSTER BAY, LONG ISLAND, N. Y.

PEABODY, WILSON & BROWN, ARCHITECTS

LIVING ROOM END OF HOUSE



DETAIL OF ENTRANCE PORCH

HOUSE FOR HUNTINGTON NORTON, ESQ., OYSTER BAY, LONG ISLAND, N. Y.

PEABODY, WILSON & BROWN, ARCHITECTS

ENTRANCE FRONT

GARDEN FRONT

HOUSE FOR JOHN S. PHIPPS, ESQ., OLD WESTBURY, LONG ISLAND, N. Y.

PEABODY, WILSON & BROWN, ARCHITECTS

LIVING ROOM

DINING ROOM

HOUSE FOR JOHN S. PHIPPS, ESQ., OLD WESTBURY, LONG ISLAND, N. Y.

PEABODY, WILSON & BROWN, ARCHITECTS

A Group of Long Island Country Houses

FROM THE DESIGNS OF PEABODY, WILSON & BROWN, ARCHITECTS

THE design of country houses is ever a field of fascination to the architect. The possibility of direct interpretation of the client's taste and mode of social life is very definite in the country dwelling, and makes a greater opportunity for diversity of treatment than in any other type of building problem an architect is called upon to solve. It is because of this close relation between requirements and completed structure that the average architect devotes far more time and effort to the study of the problem than his financial compensation should warrant. This combination of circumstances, together with a more lively interest and keener appreciation of beauty on the part of the layman has been responsible for the remarkable advance in the standards of our domestic architecture which the last decade or so has witnessed. There is particular interest, therefore, in observing the work of a single firm of architects designed concurrently over a given period of time and for different clients, as afforded by the present examples from recent work of Messrs. Peabody, Wilson & Brown on Long Island, New York. These houses show a versatility of treatment from the standpoint of architectural precedent that is unusual, especially when it is observed how carefully the details of both exterior and interior have been made to conform with the period into which the house may be placed, but which at the same time exhibit a spirit of freedom and originality that makes the architect's handling of the various styles equally distinctive.

The house of A. Ludlow Kramer, Esq., at Westbury, is a free translation of colonial motives giving in its general mass and use of the two-storied entrance portico suggestions of Southern forms. Its detail has been developed in a restrained manner and is of exceedingly light and graceful character. A good balance of color is maintained between the red brick walls and white trim. This is effected chiefly by the light main cornice, the lower members of which are carried out in brick. The portico having a full entablature is, therefore, easily afforded the position of dominance on the facade. The garden front is given an intimate relation to the setting by the semi-circular porch and open loggia above, which again recall features of some early Southern houses.

The house was planned with special reference to its site. The land slopes gradually from front to back and the view of greatest interest is from the rear. The main rooms are disposed at this side of the house, the living room, twenty-five by forty-two feet in size, occupying the whole of the right wing. A glazed porch at the end of this wing links the house with the walled-in flower garden. The walks of this garden are paved with broken flags, and interesting arched openings in the wall give vistas to a wooded knoll opposite the porch and on the other axis to the rose garden and pool at a higher level.

View in Flower Garden Looking Toward Upper Level
House of A. Ludlow Kramer, Esq., Westbury, Long Island, N. Y.

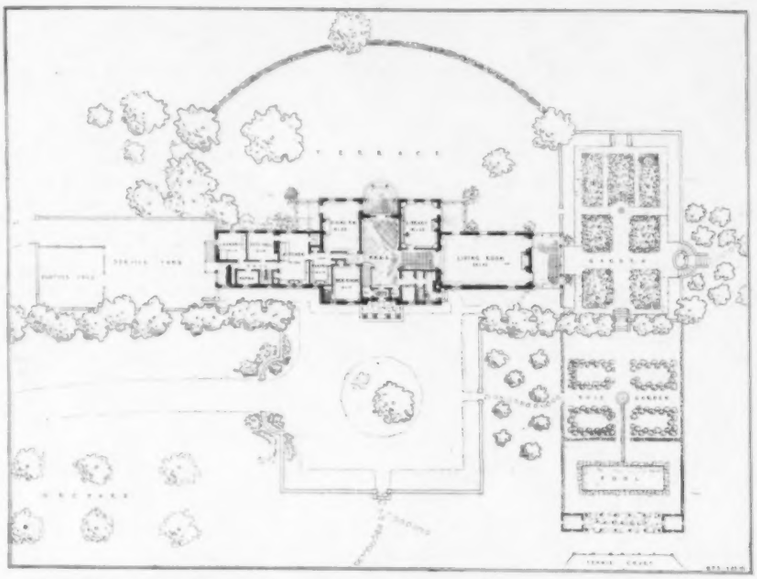
The house of Huntington Norton, Esq., at Oyster Bay, shows a development of the old Dutch farmhouse type seen on many parts of the island. These old houses are characterized by a central mass having a simple composition of six openings, three windows above and two windows and doorway below. The cornices have but slight projection and the gables are finished without an overhang. One or two lateral wings of lesser mass complete the scheme. The exterior is covered in most cases with either large shingles or wide siding.

The character of these old farmhouses is reflected in the architect's treatment of this house. Architectural features have been kept few in number and the detail portrays

colonial spirit, but in every instance it has been reduced to the simplest terms, depending upon mass and outline for its effect. The living room occupies the whole of the west wing and has an outlook in three directions.

An open terrace on the south side gives an uninterrupted view across the hills, and the porch on the west, shows a successful handling of a large outdoor living space with sleeping porch above.

The interior is carried out in simple colonial fashion having painted walls and wood mantels. The living room is two steps lower than the remainder of the house, affording an interesting interior vista and giving added height and attraction to the largest room.



Ground Layout, House of A. Ludlow Kramer, Esq., Westbury, Long Island

The cottage for John S. Phipps, Esq., is the result of alterations and additions to an old building located in that quaint section, known as Old Westbury. It was originally erected during the eighteenth century and though altered from time to time, and allowed to deteriorate to such an extent that it became objectionable, it still retained some of the attractive qualities of the original farmhouse. The architects' problem was to make use of the main structure and wings, as far as possible, and with such additions as were necessary, enlarge the house so that it would be rentable for that section of the country. The results shown in the illustrations were obtained by using the original portion of the old house as a guide for the extension of the roof lines. The main building was thereby changed on the garden front from a three-opening composition to one of five. By extending the building on the entrance

View of House From Flower Garden

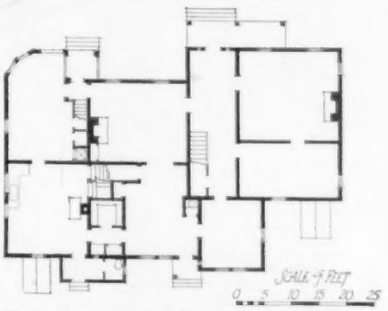
Tool House

House of A. Ludlow Kramer, Esq., Westbury, Long Island, N. Y.

front, and continuing the roof lines to eaves at the first story, an attractive cottage character was secured.

The house of Mrs. J. E. S. Hadden at Westbury, illustrates a modern handling of a design problem following English precedent more closely probably than any other, in which the setting plays an important part. The house is entirely surrounded by trees and is situated on a knoll about two miles from the town. It is designed to fit in naturally with its environment and to provide a quality of informality. The latticed windows, glazed porches and copper-covered stoops above the French windows on the terrace side give an interesting suggestion of some attractive English houses built in the later years of the Georgian period.

Garden Side of Cottage Before Alteration

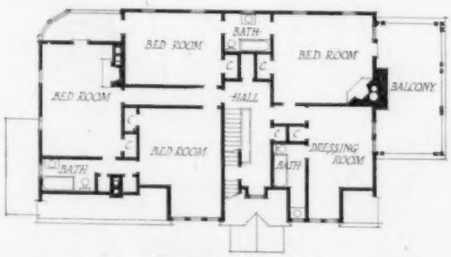


First Floor Plan Before Alteration

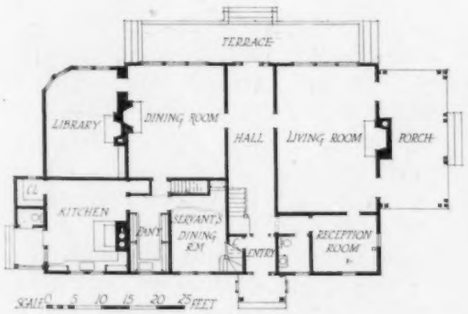
The walls are constructed of common red brick. The steeply sloping roof is covered with slates in varying shades of brown, green and black. The exterior woodwork is oak left in its natural state. Most of this woodwork was obtained from old buildings and barns in the neighborhood and left with its old natural aged color and adzed surfaces.

The intimacy of house and grounds is perhaps best shown by the views of the terrace. Here the trees are thinned out to provide a sunny spot just outside the windows of the principal rooms. A brick wall with an arched doorway screens the terrace from east winds and the service portion beyond. Old broken stone flags with wide grass joints form the pavement of the terrace, greatly adding to the informality and making a harmonious link between house and surroundings.

The house of C. D. Barnes, Esq., at Manhasset is based on the sturdy lines of early English houses, with steeply sloping roofs broken by many gables. The



Second Floor Plan



First Floor Plan

Detail of Entrance Porch

Cottage on Estate of John S. Phipps, Esq., Old Westbury, Long Island, N. Y.

eaves project but slightly beyond the walls, and are for the greater part brought close to the ground to give that comfortable homelike quality so universally admired in English houses. The roofs are covered with heavy slate graduated in size and thickness and varying in shades of brown and black. The valleys are rounded, thereby adding a distinctive note of character.

The walls are a mixture of common red brick and dark headers laid at random and slightly out of plumb and wind to create an appearance of age. The exterior woodwork is of oak, a large part of which was obtained from old barns in the vicinity and left in its natural aged color.

The interiors are in full accord with the exterior design. The living room in both architectural treatment and furnishings reflects the character of English rooms of the sixteenth century. The walls are of rough plaster, hand patted and tinted buff. The woodwork is of old oak, dark brown in color. The beam above the fireplace is a particularly fine example of Jacobean wood carving. The overmantel is of decorative plaster, worked out in a heraldic manner. Much of the character of the fireplace is due to the large fire opening and the brick lining laid in herringbone fashion. The group of windows at the end of the room is made up of leaded casements into which enough stained glass panels are inserted to give a desirable note of color.

The library and dining room exhibit a comfortable Georgian character. The end of the library formed by flush bookcases extending to the ceiling and broken by a recessed doorway is most effective. The dining room is devoid of architectural features, save the simple marble mantel; it is, however, a distinctive room in which color plays an important part. The walls are hung with a reproduction of a Chinese painted paper and the Sheraton chairs are upholstered in old vermilion leather. The early English character is again reflected in the long corridor on the entrance side of the house, where rough plaster, hand-hewn timbers, stone floor and casement windows create an ensemble of quaintness and romance, eminently fitted to the simple type of living Americans have come to associate with the country.

View of Hall Toward Living Room

House of C. D. Barnes, Esq., Manhasset, Long Island, N. Y.

A reflection of the sentiment put into the designing of this house is indicated by its name. It is called "Nonesuch House," not as a mere matter of fancy, but because of an historical inspiration employed in the decoration of its living room. "Nonesuch" is familiar as the name of a famous palace of Henry VIII, but in spite of the fact that it was a worthy example of the work of the Early Italian artists brought to England by Henry, nothing remains of it except some decorative fragments now in museums. One of these is a piece of needle work from which the hand blocked linen used in the upholstered furniture of this room is reproduced.

Respect for precedent coupled with a sincere interpretation of the client's requirements in the light of modern conditions, and recognition of advantages afforded by the topography of the sites, explain the success of this and the other houses illustrated. The trend of present-day design is further, towards simplicity of motive and directness in the expression of plan, requiring on the architect's part a thorough knowledge of materials and a sympathetic understanding of suitable combinations with which pleasing results may be obtained and in this, the present houses have profited to an unusual extent.

The Architect of the Future

PART II. SALES ORGANIZATION IN AN ARCHITECT'S OFFICE

By C. STANLEY TAYLOR

IT has been said that war reverses practically every human activity and nowhere is this truer than in relation to a producing business of any nature.

In normal times, principally in the industrial field, a demand must be created in order to find an outlet for the supply, upon the marketing of which profit is based. In times of war all unnecessary industries are restricted, and in the field of essential industry demand is automatically created, while the entire attention of the executives of producing plants is directed to forcing supply to meet that demand. In an essential industry in time of war the creation of demand, or as it is called, " salesmanship," is not of paramount importance as it is in ordinary times.

The term " reconstruction period " inherently connotes a period of transition or a state of flux in which there are no extremes. We find, then, that in this period the creation of a demand and an organization to produce supply are practically of equal importance. This is a period when sales organizations are being developed and are outlining programs and policies. At the same time production units and the machinery of supply are being organized on a peace basis and made ready to meet the demand which is certain to develop in all normal lines of production which were checked by the abnormal conditions of war.

Undoubtedly the most important production and and that which most greatly felt the check of war conditions has been the building industry. It is significant to read the indication of the importance of a building program in the reconstruction period. Labor experts are looking to building activities to absorb excess labor which is no longer necessary for carrying out of large war production programs. The very nature of the types of building which are necessary to redevelop peace activities shows clearly that the architect is to be called upon to play the part of an important factor during the after-war period. There will be a great amount of work for architects, but those who are most successful will be those who have recognized the transitory state of business and have given particular attention not only to the development of a good productive force — or in other words a well organized architectural office — but to the selling force which will be needed to create a demand for the services of a particular office and to bring the merits of the organization to the attention of prospective clients.

The subject of salesmanship in connection with an architect's office offers an interesting opportunity for analysis. In general it may be said that the average architectural office today lacks entirely any clearly defined selling activity. The salesman is usually the architect himself or a member of the firm, and the methods through which work is brought into the office are various, and in many cases, intangible. Actual constructive selling has been held as unethical in many instances and the development of business has been through social and political connections; through recommendations of clients and often as the result of well deserved publicity given unsparingly by the press.

The idea of developing new business through social connections is good, provided real service is given; but with the growth of modern business ideas there is a consequently growing demand for better and more constructive service. With the æsthetic factor the utilitarian is being combined by popular demand. The architect to keep abreast of the times will not only know his own business but will be able to appreciate the business needs of others and through the medium of fitting design he will be able to create buildings which are veritable business machines in their efficient carrying out of the purposes of occupancy. In this manner, though the first contact with a client may be of a social nature, the continuance of good-will and the building of a reputation for good work will be contingent upon meeting the client's wishes rather than forcing upon him a building with which he is at least partially dissatisfied.

If we were to prepare a functional chart applicable to an architect's office we would find it essentially the same as that of a manufacturing concern in which the selling factor should play a most important part. The sales force must be the eyes of the office. Having contact with outside conditions, the suggestions of those who are experiencing the business contact will prove of exceptional value to the designer and engineer.

To sell the services of an architectural organization one must be equipped with constructive imagination; a quick and receptive mind; a sense of business orientation which makes possible a discussion of the broader features of any building project; a knowledge of financing and real estate operation and, last but not least, a sense of humor which is quick to meet and obviate an unpleasant situation.

Another subject which must be settled definitely in the mind of the salesman is that of misrepresentation, either wilful or unconscious. If architecture is to be placed on a business basis every contract must be carried out along business lines. To do this there must be clearly established the exact service which the architect feels he can render and he must be frank in stating his limitations whatever they may be.

Depending on the size of his organization and the capacity of the men who comprise its personnel there is practically no limit to the contribution he may make to his client's project. No office should ever attempt to go beyond its capacity, nor should statements be made which cannot be substantiated in deed.

It will be found upon analysis of the question that there are two broad classes of distinct methods of selling architectural services. The first and most interesting may be termed the constructive sales method. The second is the passive or receptive method. The constructive sales method, in the course of which a project is conceived and worked out to the point of building, is by far the most productive and most interesting. The receptive method, which is that of practical dependence upon recommendations of friends and clients is easier but more limited in scope and opportunity. As a matter of fact the architectural offices of America today may be divided into two classes along the lines indicated. The average office during past years has been of the receptive type. The progressive and successful offices of the receptive type are with a few exceptions explainable as due to social influence.

Constructive sales methods offer in the near future many opportunities for the rapid expansion of the activities of an architect's office. In this after-war period the minds of business men are in a state of flux. Old methods and old traditions have been uprooted and changed. During the period of war the activities of every business interest have been directed to some form of contribution to the building of a tremendous war machine. The purposes of many of our factories have been diverted from peace production and placed on a war basis. Building construction of every nature not absolutely necessary to the carrying out of the war program has been restricted even as all business activity along such lines has been coördinated and redirected according to the demands of war conditions. Now we are in the reconstruction period and the great problems of peace production are facing the business world. We need office buildings, dwellings of every nature ranging from small houses to great apartment houses. In spite of the construction of many factory buildings, the demand for structures of this type has not ceased, as many of the factories built during the war period were for specific purposes not entirely filling the need of peace production. As a result of this condition there are being contemplated the construction of paper mills, machinery assembling plants, fertilizer plants, while a great quantity of remodelling of factories will take place. At various ocean and lake ports throughout the country where the demand of foreign commerce is foreseen, great terminal projects are being considered, including the building of warehouses and storage buildings of various types, refrigeration plants, buildings for light manufacture. State and municipal improvements in the form of buildings of many kinds are to be undertaken in a measure heretofore unknown in this country. Educational buildings will go forward. To sum up the situation, immediately upon a clearly defined declaration of peace terms, business will suddenly resume its normal course, attempting in a short time to make up for the loss of momentum in peace activities.

The United States today is twenty-five per cent under-built in homes, and it may be confidently expected that within the next two or three years a million new homes will be started. Another interesting field is opened up in the designing of fine suburban residences and country homes. Thousands of people have been made rich in the course of war activities and even now are considering home building on a scale heretofore unknown to them. The real estate situation, which in almost every section of the United States has been practically dormant for some years, shows signs of reawakened activity on a scale undreamed of even by realty operators and brokers. Transportation improvements are contemplated in practically every large industrial city in the country, and at the points where the newly extended transportation lines meet partially built up territories, a large volume of building construction may be expected.

To the architectural office, therefore, which undertakes selling along constructive lines, there is offered a rich field for endeavor. The building needs of various business activities can be quite accurately forecast. In the field of apartment houses and office building construction the architect will find many interests in a receptive mood provided a definite scheme may be submitted. Suburban developments are to be undertaken and where a housing shortage is acute it is certain that a carefully worked out plan for development to provide the necessary type of homes will receive favorable attention and interest of local capital.

Basic national changes are taking place which are to influence and induce building alteration and construction, for instance, the national prohibition movement which has now reached a climax predicating the abolishment of the liquor traffic in this country. The result of the closing of saloons and the reorganization of many forms of business which heretofore have depended upon their income from the sale of liquor as a large source of profit will result in considerable increase in amusement and recreational enterprises of another character. Theater attendance, particularly at motion pictures, will increase. Community and athletic clubs will largely take the place of cafés. Hotels must be constructed along new lines and in many cases remodelled to offset the cessation of profits from the liquor traffic.

It is plain, therefore, that architects as a profession will benefit greatly in the next few years through the resumption of building on a large scale.

It is also plain that those organizations equipped to carry out their work along businesslike lines and to sell their services in a constructive manner will have the greatest success, not only in the amount of work on their boards but in the creation of good-will and good reputation.

In order to put into force a constructive sales policy in an architectural office the first step to be taken is an analysis of the present organization to determine:

1. What real service can be offered to the client with the existing organization.

2. How can the organization be bettered to enter into broader fields of activity.

3. What general classes of building design is the organization best fitted to carry out.

4. How can the merits of the organization be brought before possible clients.

In studying the organization of an architectural office it will be found that the best accomplishments of the past have been along certain lines, for instance, the design of city residences and apartment houses, suburban and country homes, office buildings, or any other of the general types in which buildings may be classified. The result of this analysis will indicate clearly the fields which can be most successfully followed in constructive selling, as the salesman is already in possession of one more selling feature, that is, successful accomplishments in the design of the type of building for which he is attempting to sell the services of his organization. If it is felt that the type of work for which the present organization is best fitted is too limited to meet the possibilities of the next few years, a careful study of local developments and demand should be made in order to determine which classes of design it is most desirable to undertake in addition to those for which the organization is already fitted. Having determined the exact field which it is desired to cover, the organization must broaden in order to offer the client full service of an existing organization.

In carrying on an architectural practice in common with most professional activities there is not required a large plant investment as in the conduct of a manufacturing business. It must be realized that except for office furniture and rental obligations, an architectural office represents no actual investment and for this reason if a field for extended activities offers sufficient inducement, there should be no hesitancy in enlarging the organization even before the actual work is in the office. This extension of the organization should take the form of adding to the payroll a few high-priced men who have made successful records in the particular field which it is desired to enter. This development offers another feature for the salesman to present to a possible client in showing reasons why the services of his organization should be retained for a particular project.

Another determination which must be made in building up the organization is exactly what scope of activity it may be desired to cover in any building project. In general it would seem advisable that architecture and engineering be combined in carrying out the design of building projects. The architect is not an engineer, and engineering advice in many instances will not only simplify design, but will insure economy in construction which will be appreciated by the client. Added to the architectural and engineering activities there must be a third activity in order to create a well rounded service for the client, particularly in the design of business buildings of any nature. This third activity is difficult to define, but it might be classified as an expert business service, having as its purpose a careful study of the real estate and financing features of any project together with efficiency of design, in order to make the building most closely fitted for its purpose. Reducing this service to terms of personality, it is perhaps the most difficult activity to include in the organization. In some cases real estate experts having had general experience in the management of business buildings have been taken in this part of the architectural organization. In other cases manufacturing experts and efficiency engineers have been found the best type to include in the organization. Perhaps the best criterion of the type of man most fitted for the particular work of supplying business judgment to all projects is the nature of building design which the office may specialize in. In all cases the business service of the office should be part of the activities of the sales organization. A salesman who is equipped with general business and architectural knowledge sufficient to discuss with clients not only types of building, but financing, organization and purpose of the project, will not only prove the most successful salesman, but will prove invaluable to the office as a critic of design and construction.

Another fact which may be recorded at this time is that the weakest point in the average architectural office is that of quantities and estimates. Naturally one of the first questions of a client is relative to cost, and unless this can be answered in a satisfactory manner the best efforts of the salesman will be nullified. Careless or snap-judgment cost estimates should never be made by the salesman; in fact, it is well to incorporate in the office a general rule that no estimates of cost are to be given to a client until the estimator has first had an opportunity to figure on the job. A mere statement by the salesman of this organization rule will satisfy any business-like client and reassure him as to the quality of service which is offered.

Having determined the fields in which it is desired to operate and the exact service which may be rendered to a client in any one of these fields, the salesman is interested in bringing before the public in every

possible manner the merits and accomplishments of his organization. In doing this he will not neglect an opportunity for publicity through the various mediums which are editorially interested in such activities as his organization may be engaged in, nor will he scorn the possibilities of direct advertising, selecting dignified mediums to carry his message into the fields which he wishes to reach, in a manner tending to invite confidence and interest in the service which he has to offer.

The constructive salesman will study the possibilities of developing communities and of growing business needs. He will study the organization of business activities which will sooner or later need building construction. The question of financing and the bringing together of financial interests and clients in order to consummate a building project is a method which should not be overlooked by the architectural salesman. A recent case in the office of Mann & MacNeille will serve to illustrate the possibilities of such constructive salesmanship. In this particular case a large manufacturing concern had in mind the organization of a real estate development company to build a residential addition to a city at a point near their principal plant. During the course of the first conversation between the representatives of the office and the client the latter made the following remark:

" I am very much interested, gentlemen, in your ideas as to the design of these houses and the layout of the property, but I believe I have taken the second step first. The first man I wish to talk to is the man who can advise me on the organization and financing of this development company. When I am ready for the second step I will be ready to take up the matter with architects."

Fortunately, the extent of this organization made it possible to reply:

" It is not necessary, Mr. ——, to take up that step outside of our organization, as we have experts who will prepare for you an organization and financial report which may be used as the basis for the first step in carrying out your project."

The result was that the preparation of this report was authorized and a project which might otherwise have been lost to the office was soon on the boards.

It must be realized that even though a client may wish a building for purposes of his own business, he may not be the best judge as to the type of building which should be provided. Here again the services of the properly developed sales organization will be utilized in studying the location and type of building, consulting if necessary with others who have had a similar building in order to be able to produce for the client the most efficient and suitable building for his purpose.

The foregoing points cover in a general way activities of a business and sales organization in an architect's office and will serve to indicate the many possibilities of applying business principles to the mutual benefit of the architect and his client.

It must be understood that although for purposes of emphasis the business features of the architectural office have been rather extensively outlined, at no time has the importance of good design been purposely underrated. The designer has a particular function in the architectural office which is most important and without which the selling and business aspects of the organization would prove useless. When it has been determined as to the type of building desired, the services of an efficient designer to prepare quickly sketch plans will prove a most valuable adjunct to the carrying out of a project. The functions of the designer should be clearly defined. His is not a business of carrying out working drawings, but of creating a basis for them, and his most active hours will be those spent in thought and consideration of the problem which has been placed before him. The provision of intelligent and constructive criticism through the engineering and business divisions of the office should not hamper, but should rather stimulate the designer to the creation of a type of building which will combine esthetic and utilitarian qualities to the satisfaction of the owner and without a sacrifice of professional dignity or a pandering to commercialism.

Frank E. Wallis, in an interesting description of the development of Gothic architecture, says, " When the builders of the thirteenth century received orders for churches more than twice the size of any that had ever been built, their chief difficulties were mechanical, as may be imagined." After describing the method by which piers and buttresses were provided to take up the thrust which developed from the load of the roof and the stone vaulting, he proceeds: " These walls or buttresses were constructed in the form of arches anchored at the outer edge with heavy masonry, growing from raw utilitarianism into the pinnacled glorification of assurance, economical of material, but necessary as the bones of the human organism are necessary, an external rather than an internal skeleton."

So, in the development of modern American business and home architecture (which during the reconstruction period will be more clearly marked than ever before in the history of this country) the development of the esthetic qualities of such architecture will be influenced for the better by the utilitarian demands of modern business and engineering rather than restricted by commercialism. It is interesting to realize that behind every definite period of artistic development in the field of architecture there may be recognized a clearly defined business stimulus.

The New Arsenal Technical Schools at Indianapolis, Ind.

H. VAN BUREN MAGONIGLE, ARCHITECT

THE newer note that is creeping into our educational systems is evident in the number of trade and vocational schools contemplated for early erection in some of the larger industrial centers of the country. One of the most important, because of its size and scope of projected service is shortly to be erected in Indianapolis, Ind., and to be known as the Arsenal Technical Schools.

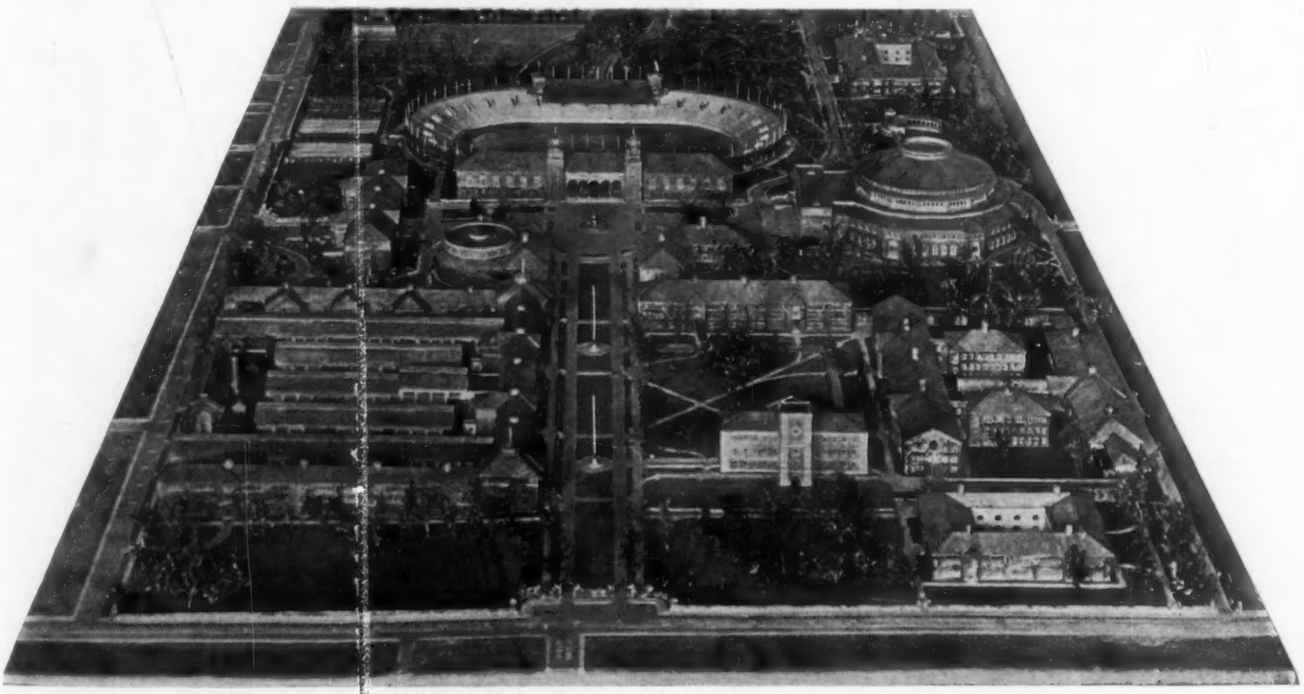
Indianapolis enjoys the distinction and advantage of having what is termed a "School City," which is a separate department of the city government, independent of the political city and possessing power to issue its own bonds. This has been a large factor in a consistent growth of the city's school facilities, and the new technical school is a logical further development.

The possibility of a school carried out on a large scale came when the "School City" obtained the site of the old United States Arsenal, 76 acres in extent, 1250 feet by 2500 feet. A small semi-temporary building was erected on the site and the existing old Arsenal buildings were utilized for school purposes as far as their character would permit. An industrial survey of Indiana and the City of Indianapolis brought to light many uses for such a school and it was in special reference to what was discovered by the Indianapolis survey that the present plans were made. The school serves primarily the city of Indianapolis, but with its greatly enlarged facilities it might easily have some effect upon the industrial life of the State. The new construction will be financed through the usual school bonding system. Its facilities are entirely public, no tuition fees being charged. It has the enthusiastic support of both industrial leaders and labor and with their coöperation, it should prove of singular advantage to its community.

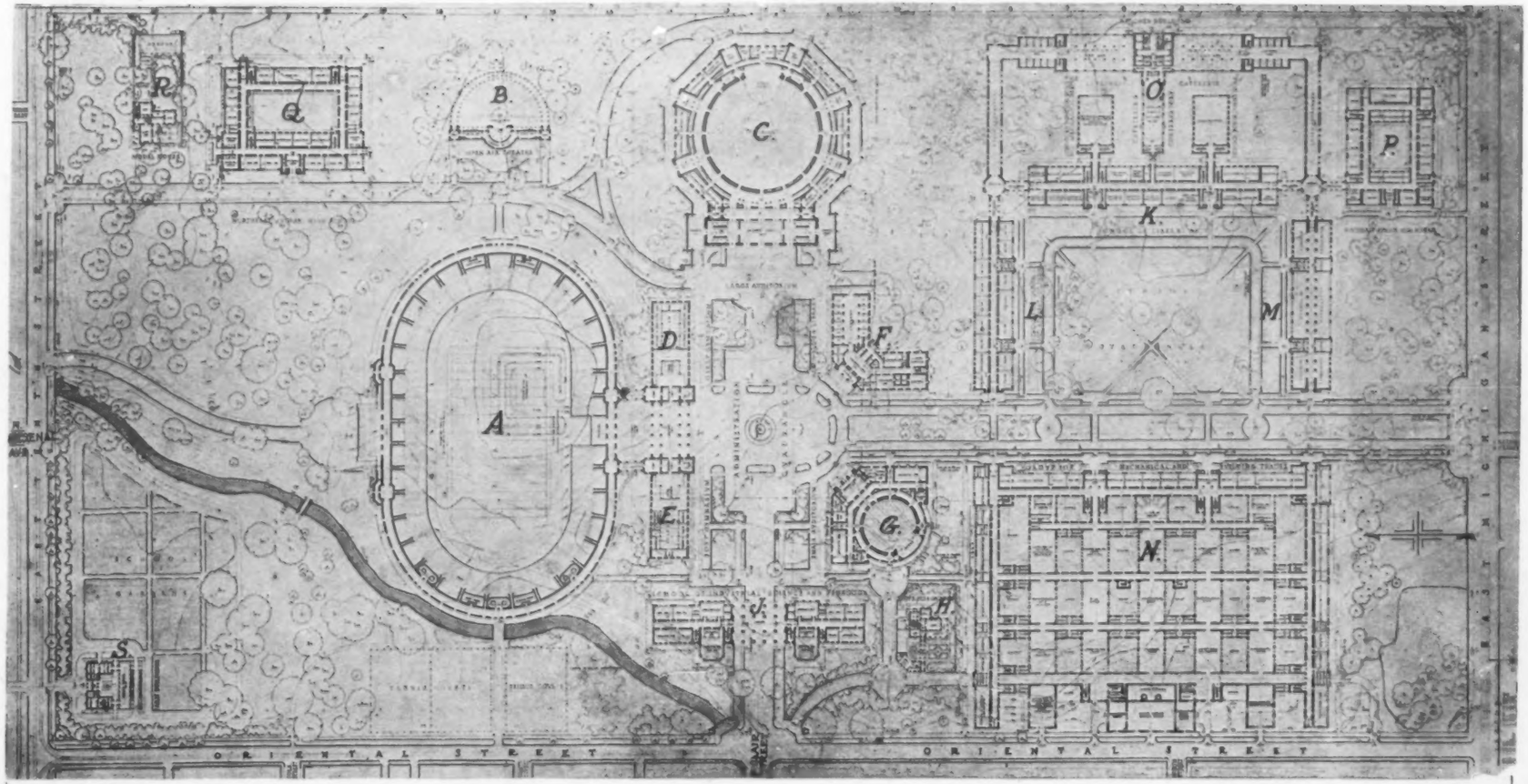
A general description of the plan and the individual buildings is afforded by the following excerpts from the report of the architect, H. Van Buren Magonigle.

THE people of Indianapolis are fortunate in the possession of a site for the Arsenal Technical Schools of unusual advantages, qualities and beauty. It is only a mile from the very heart of the city and equally accessible therefore from every part. As the former site of the United States Arsenal, it has historical associations. It has many natural beauties — slightly rolling ground with groves of fine trees interspersed with more open spaces. A stream, Pogue's Run, flows through the northwesterly corner and further diversifies and gives interest to the grounds.

An opportunity rarely presents itself for the establishment of a great school in an environment of such distinguished natural beauty and one's first impulse upon beginning the study of the possible development



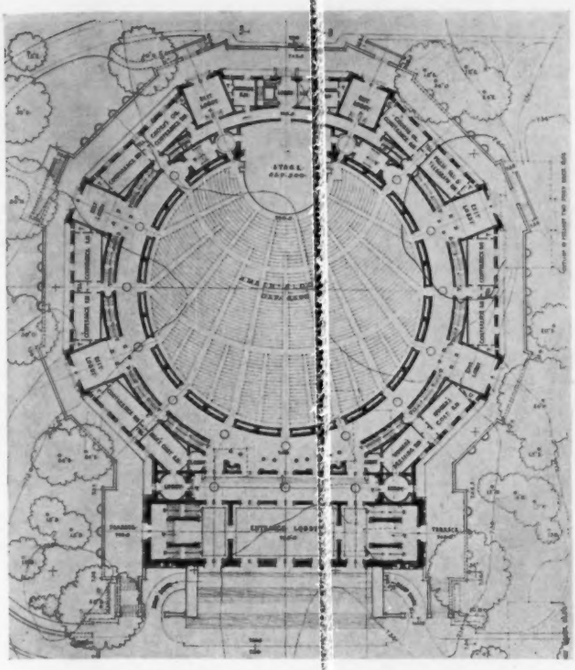
General View of Model Looking Down Main Axis, the Prolongation of Arsenal Avenue



A Stadium
B Open Air Theatre
C Large Auditorium
D Girls' Gymnasium
E Boys' Gymnasium
F Administration Building and Library
G Small Auditorium
H Superintendent's House
J School of Industrial Science and Pedagogy
K School of Liberal Arts
L School of Commerce and Applied Design
M School of Graphic Arts
N Shops for Mechanical and Building Trades
O Cafeteria
P Southeast Junior High School
Q Northeast Junior High School
R Model House
S Farm Buildings

GENERAL GROUP AND PLOT PLAN, ARSENAL TECHNICAL SCHOOLS, INDIANAPOLIS, INDIANA

H. VAN BUREN MAGONIGLE, ARCHITECT



Main Floor Plan of Large Auditorium

of this school is to determine to so design it that the native beauty may be preserved in the fullest possible measure, and to adhere to this determination throughout.

An examination of the property in its present condition reveals certain physical aspects which are controlling and suggestive. The portion south of the line of St. Clair street may be described as a lightly wooded plateau, sloping to a more heavily wooded ravine in its northerly side and by an even sharper gradient to Oriental street on the west, this westerly section being sparsely wooded. Along the southerly border is a good stand of trees and in the southwesterly corner a particularly fine grove chiefly of elms. North of the ravine above referred to and opposite St. Clair street is a wooded eminence about the same height as the southerly plateau and which slopes gradually to the west over an area quite free of trees, and to the northwest and north with various modulations, the land rising again in the northeasterly corner. West and northwest of Pogue's Run it is practically flat and open, with few trees of especial value.

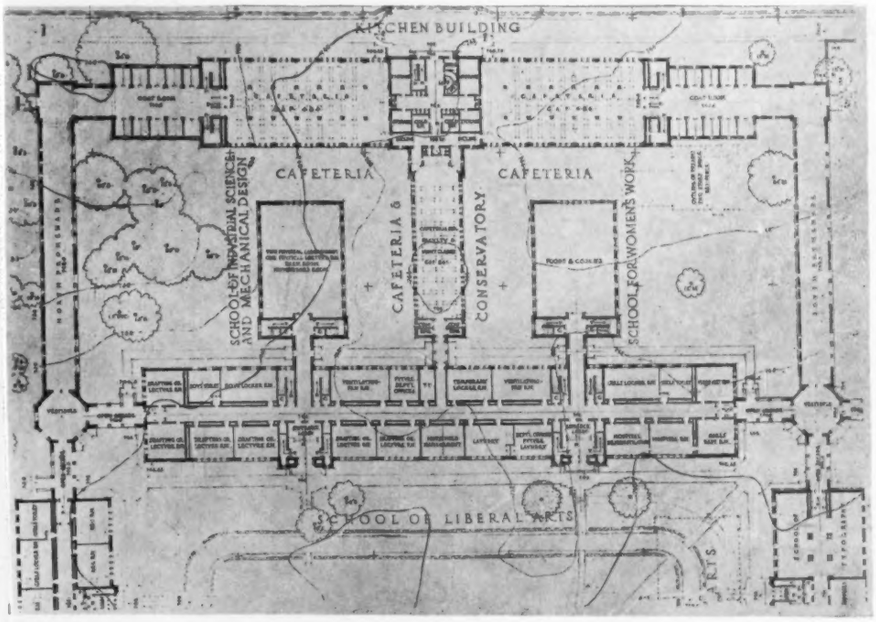
Turning now to the matter of approach and access, it becomes evident at once by reference to the city plan that Arsenal avenue is the principal line of approach and that St. Clair street, owing to the presence of the car barns opposite that entrance, will be almost as important. A street car line runs through East Michigan street on the southerly boundary, crossing the head of Arsenal avenue. Another swings into Oriental street on the west from St. Clair street and runs north to East Tenth street on the northerly border where it connects east and west with the line running through the latter thoroughfare.

It is evident, then, that we have two major lines of access, Arsenal avenue and East Michigan street on the south, St. Clair and Oriental streets on the west, and one minor from East Tenth street on the north; we may also consider the access through the cross drive of Woodruff Place on the east as a fourth but distinctly subordinate entrance.

Accepting a prolongation of Arsenal avenue as one cardinal axis and an extension of the axis of St. Clair street as the other, we may examine the ground to determine the most advantageous sites for the various buildings and groups of buildings. These buildings are to be:

School of Liberal Arts.

This is to be the first building erected and the problem has been to design it so that a certain portion or portions could be erected with the funds available in such a manner as to satisfy the immediate needs of the school and later lend itself to a redistribution of its uses when the whole school is in operation. This



Main Floor Plan of School of Liberal Arts Group

building will ultimately be devoted to those branches of study peculiar to women's work.

School for Women's Work.

School of Industrial Science and Mechanical Design.

Schools of Commerce and of Applied Design.

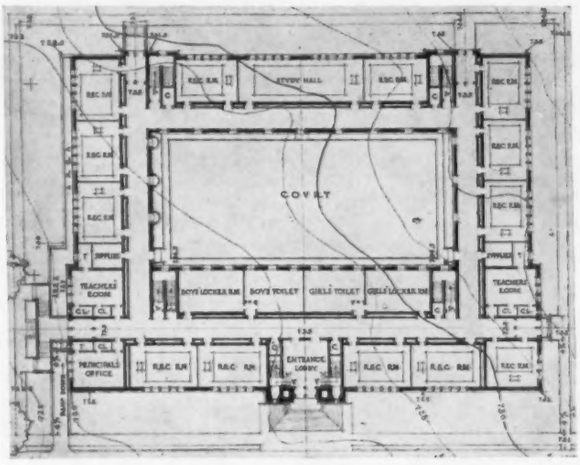
School of Graphic Arts.

Group for Mechanical and Building Trades including Power House (Shop Group):

The general principle adopted for the plan of this group is to arrange the classrooms, lecture rooms and laboratories around three sides of a rectangle inside of which the shops are placed. The classrooms, lecture rooms and laboratories are thrown to the outside of the rectangle, with a corridor intervening between them and the shops to insure the greatest possible degree of quiet, light and freedom from dirt. The shops occur in ranges separated by ample courts and connected at each end of each shop with longitudinal corridors running north and south, connecting with the main corridor serving the classrooms and laboratories.

School of Industrial Science and Pedagogy.

This building is proposed to be dedicated to the instruction and training of industrial leaders and of teachers for the Arsenal Technical Schools. Just as for our new army it was found necessary to establish schools of instruction for the officers who were to command it, the same necessity is beginning to be observed in the industrial and pedagogical fields. The technical school is in its infancy. The sources



Main Floor Plan Northeast Junior High School

from which properly equipped teachers may be drawn are few, and industry needs and will need, more and more, trained leaders, foremen and executive heads, thoroughly equipped on the technical side. This building is intende to render that service.

Cafeterias for Students, Faculty and Employees and for Night School.

Two Junior or Pre-vocational High Schools.

Administration and Library Building.

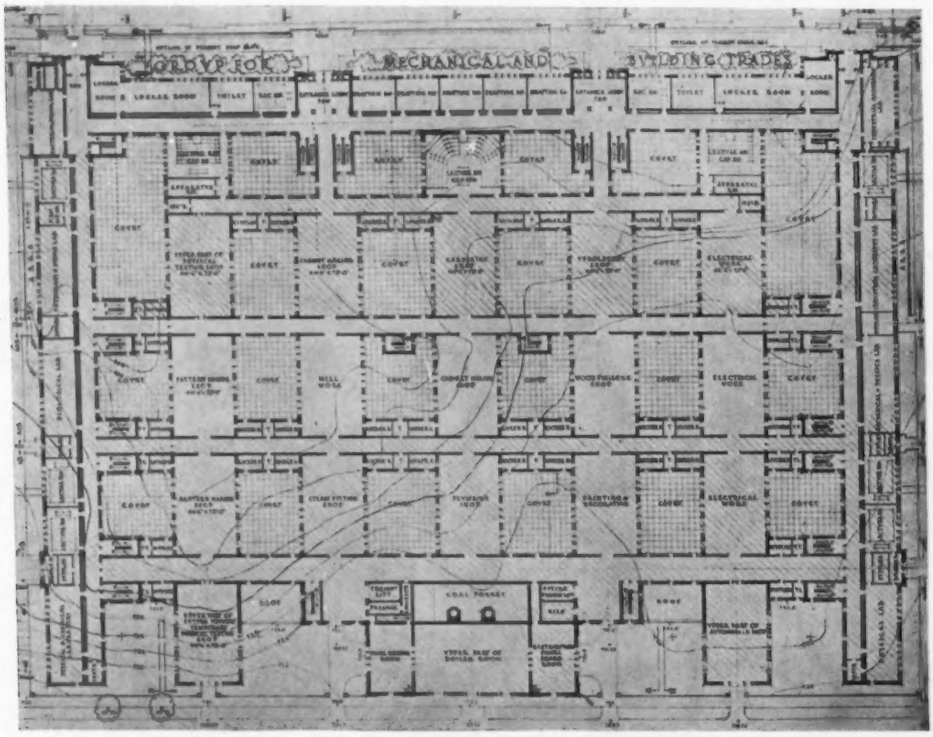
Auditorium with a Seating Capacity of 1500 with Meeting Rooms.

Gymnasium for Boys and One for Girls.

Stadium and Athletic Field.

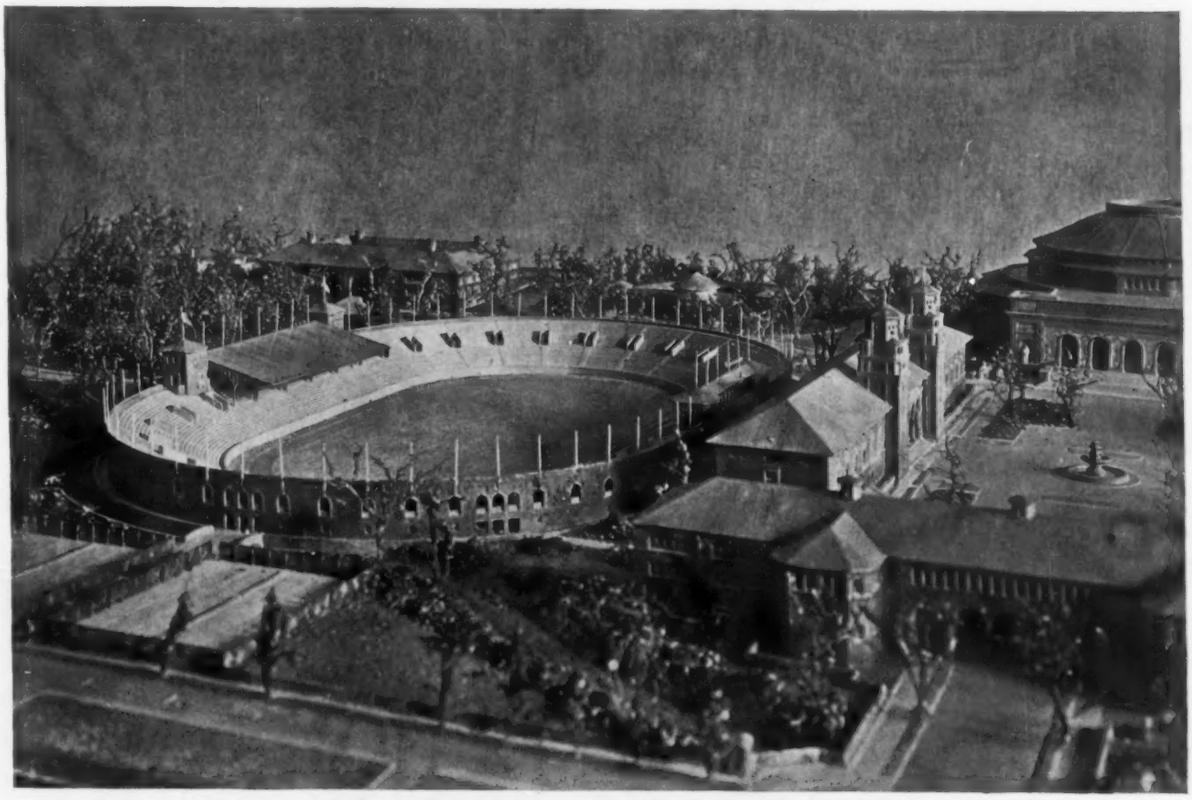
Auditorium with a Seating Capacity of about 9000.

It may be asked why an auditorium of a capacity of 9000 should be proposed as a part of this plan. The answer is to be found in the statement that Indianapolis very much needs an auditorium of this capacity wherein large industrial, social and political conventions may be held on a site close to the center of the city. It would also, while satisfying these civic requirements, provide a place where the entire school may be gathered together under one roof upon certain occasions.



Main Floor Plan of Shops for Mechanical and Building Trades

VIEW LOOKING ALONG ST. CLAIR STREET AXIS TOWARD LARGE AUDITORIUM



VIEW SHOWING ST. CLAIR STREET APPROACH AND STADIUM

MODEL FOR ARSENAL TECHNICAL SCHOOLS, INDIANAPOLIS, IND.

H. VAN BUREN MAGONIGLE, ARCHITECT

Open Air Theater.
Model House for Domestic Science Work.
Residence and Office for a Superintendent of Buildings and Grounds.
Farm Building and Greenhouse in Connection with School Gardens.

These fall naturally into two main divisions: (1) school buildings proper, and (2) those devoted to general or special purposes and especially for the assembly of large numbers of persons.

Upon analysis it is logical to place the latter class of buildings near the St. Clair street entrance, where great crowds may be easily handled by the near-by reserve stores of cars in the car barns.

The other buildings with certain exceptions it seems proper to group about the Arsenal avenue axis on the plateau formerly described. The westerly portion of this plateau is quite bare of trees and slopes sharply down to Oriental street. Since the shops with their necessary laboratories, lecture and recitation rooms occupy a very large area, this site is admirably adapted to the purpose. The slope of the ground gives opportunity for two-story buildings, and a site for the future power house at the lowest point of the property, a consideration of weight in the distribution of steam or hot water. This group is designed as a hollow square formed by the classrooms and laboratories with the shops in the center. The southerly side of the square screens the shops from view from East Michigan street, the northerly screens them from the Administration Quadrangle, while the easterly side fronts on the main approach road from Arsenal avenue and forms one side of another square, the other three sides of which are occupied to the east by the School of Liberal Arts with the School of Industrial Science and Mechanical Design and School for Women's Work treated as extensions thereof to the rear, and still further east the cafeterias; to the north the Schools of Commerce and of Applied Design, and to the south sometime in the future a School of Graphic Arts; but for the present the old arsenal building will remain to frame that side. These buildings are so disposed that they spare the greatest possible number of trees and group themselves about a pleasant shaded area which we may call the School Quadrangle.

Now as to the grouping of the other buildings. By as fortunate a dispensation as that which gave the shops their ideal location, there is a large open area along and about the St. Clair street axis suitable for another large quadrangle around which the buildings having semi-public functions may be disposed, to be called the Administration Quadrangle. On the northerly side and on the axis of Arsenal avenue, are placed the two gymnasia connected by an open arcade which is flanked by two towers to give an adequate architectural accent to close the vista from Arsenal avenue. Immediately behind it in a large open space is the Stadium with a seating capacity of about 22,500.

On the easterly side of the quadrangle on a slight eminence is the large Auditorium which centers on St. Clair street. The westerly side is occupied by the School of Industrial Science and Pedagogy, one feature of which is a great gateway of five arches through the building, the building itself shutting off the unsightly and uninteresting view of the car barns and St. Clair street from the quadrangle. On the southerly side and west of the Arsenal avenue axis is the small Auditorium and corresponding to it on the east is the Administration and Library Building which gives the quadrangle its name and which is placed here as falling conveniently near the intersection of the axes of the two main approaches and to all of the varied activities of the school.

The Administration Building, the Schools of Commerce and Applied Design and the Large Auditorium have been so placed that they at once frame and preserve the ravine to which previous reference has been made. This is a spot of peculiar beauty and can be made still more attractive by the judicious planting of flowering shrubs and wild flowers. As will be observed, winding paths which follow natural grades, avoiding the trees, give access to all parts of the charming hollow.

A foreground has been provided along East Michigan street, preserving the present natural character of the landscape. The ground to the west of the Arsenal avenue entrance and south of the shops is beautifully modelled, descending to the stately grove of trees in the southwest corner.

It having been determined to provide for two Junior or Pre-vocational High Schools, it seemed wise to place them near the northerly and southerly boundaries, to serve the sections of the city nearest to each. Accordingly one has been located in the southeast corner of the grounds, near what has come to be a customary minor foot entrance, facing down the space just referred to as a natural foreground to the school on East Michigan street. Placed here it also screens off the view of the cafeterias to the east of the Liberal Arts Building. For the other Junior High School a site is selected not far from the present East Tenth street entrance to the northeast. Part of this site is now occupied by school gardens, but the land here is unsuitable and it is proposed to transfer them entirely to the flat open area to the West of Pogue's Run, admirably adapted to this purpose. To the north of the northeasterly Junior High School is a beautiful grove chiefly of magnificent beeches in which now stands an old house on a natural knoll. This is an ideal site for the Model House, where students may work out the daily problems of housekeeping in all its aspects.

Between the High School and the large Auditorium and on the longitudinal axis of the Stadium is suggested an Open Air Theatre seating about one thou-

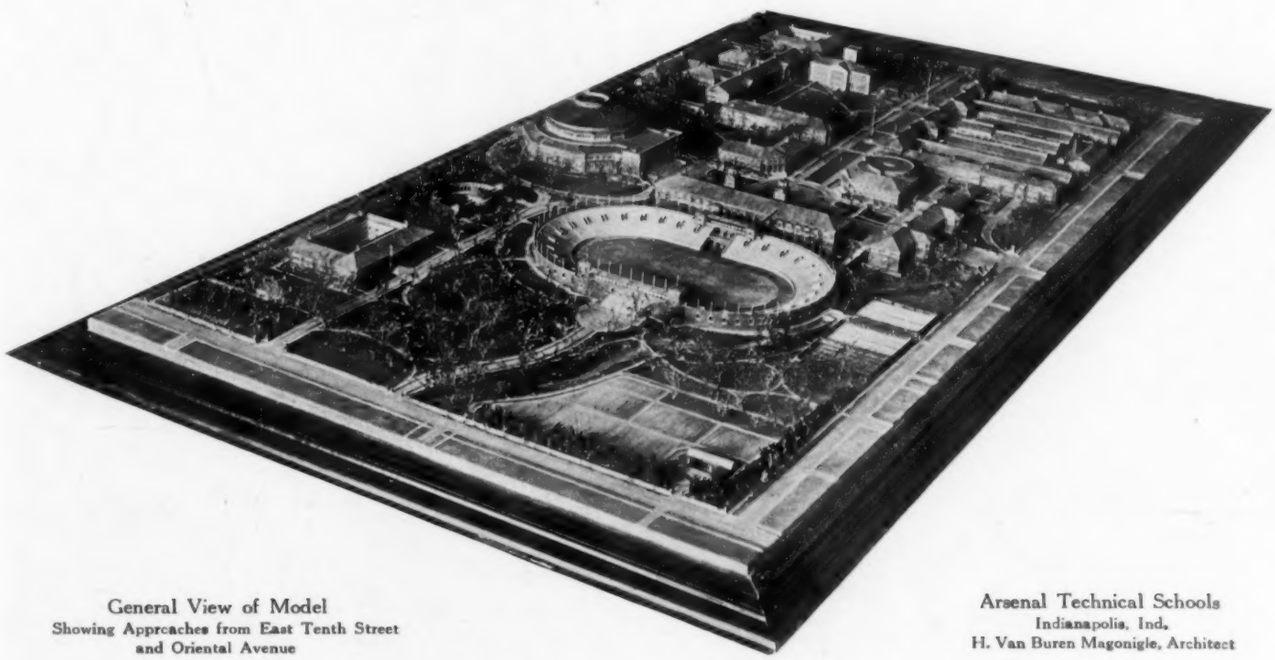
sand persons, away from the noise of street traffic and in a natural hollow, backed by fine trees.

The residence and office of the Superintendent of Buildings and Grounds is placed to the right of the St. Clair street entrance, controlling the delivery of supplies to the shops and to the school in general from Oriental street.

Thus disposed, the natural grades are made use of to avoid excessive cut and fill and the native beauties of the property are preserved to the fullest possible extent. That portion of the grounds north of the Stadium lying between the entrance road from East Tenth street and Pogue's Run, an area of about five acres, is left entirely untouched, except for winding paths to render it accessible. Here are many fine beeches and a tangle of undergrowth which by proper thinning and trimming may be made into a wilderness of great beauty. On its westerly boundary, the banks of Pogue's Run should be planted with water-loving plants, trees and shrubs and made to contribute to awakening and maintaining a love of nature in the students. It is not enough to feed the mind and train the hand; the soul must be satisfied as well. This is especially true and important in a trade school where so much of the student's time is taken up in the study of mechanical pursuits. And the citizens of Indianapolis are to be congratulated upon the fact that such of their children as attend this school, during their most impressionable years will receive, more or less unconsciously, perhaps, impressions of beauty that will last them forever and go far by their benign influence to soften and enrich lives of toil and endeavor. The influence of beautiful surroundings during school days cannot be overestimated. It is hard for the young to go to school at all. And if the school environment is ugly and forbidding not only is school obnoxious at the moment but the child in after years looks back with loathing instead of affection to his Alma Ma'er.

It is pertinent at this point to touch upon the architectural style adopted for the whole group and the materials proposed. We may assume that the general effect should be unified, that for economic reasons we must rely upon simple and inexpensive materials and that in view of the widely diversified nature of the buildings, ranging from the simple and utilitarian shops to the monumental character necessary for such a structure as the large Auditorium, the style to be adopted must be flexible. The brick and terra cotta architecture of Northern Italy presents all of these desirable characteristics. By its use, in the instance of any given building, we have at our command a wide range of possibilities of treatment from the period in which Italian Gothic merges into the Early Renaissance to the later and more sophisticated forms of the Renaissance itself.

The materials proposed are a rich dark brick, plain and moulded, running the gamut of several shades and producing the general effect of reddish brown; terra cotta of a tone to harmonize therewith and polychrome terra cotta for the sake of concentrated color spots where accents are required; and in certain places such as the frieze over the arches between the Gymnasium towers and the facade of the large Auditorium, sgraffito. For steps and colonnets and the like a dark stone similar to North River bluestone should be used. The roofs should be of red tile with a good texture and a range of shades.



General View of Model
Showing Approaches from East Tenth Street and Oriental Avenue

Arsenal Technical Schools
Indianapolis, Ind.
H. Van Buren Magonigle, Architect

EDITORIAL COMMENT

Build Now With most of our architects desperately idle, with building quite at a standstill and with labor insistently clamoring for occupation, building conditions are so imperative that they cannot with safety be ignored, and we seem to be facing two distinct lines of conduct. One is to wait, sit back and bemoan our hard times, refuse to be the first to start new building, let the other man do it, and see nothing but disaster ahead. The other way is to pitch in, study economy and construction and planning, seek, if necessary, new methods and devices, be willing to take the first step, but above all to DO IT NOW. The first course means continued stagnation, increased labor complication, loss of confidence and of opportunity and of money. The second course means co-operation, the seizing of all possibilities at a probable profit to those who act promptly and intelligently, besides which it means serving the country in this, its desperate hour of need. These courses are now before the men of means and of those who control funds in banks, trust companies and otherwise, and who must be the first to offer relief. But the architectural profession has its manifest duty to present these possibilities in all their import for good and bad to their clients.

Now what are the real facts in regard to prices? Steel, which is fundamental in modern building operations, has been quoted at about $60 a ton for mill orders fabricated and delivered. Within two years it has been as high as $280 a ton. Cement has dropped in large lots to prices which compare very favorably with the prices of two years ago. Labor is uncertain, is demanding large compensations, but as yet has not had to meet the real test of supply and demand because there is plenty of the former and none of the latter. We know, however, by actual experience that labor is much more efficient than it was six months ago, that even at the higher wage scale, concrete, brickwork and masonry generally can be put in place at less cost than formerly, and there is every reason to see in the attitude of labor not so much a determination to take all the profits as a fear that there may be none at all. Once the new movement begins there will be no lack of hands to help at reasonable prices. As to terra cotta, one of the largest manufacturers made a statement that if he had any actual work to quote on he could give prices for delivery which would be a revelation to those who are dreading the high cost. Carpenter work is very high, but that cuts really a very small figure in the modern commercial building. A most careful survey of the market quite fails to justify the conclusions of some of the pessimistic statements which have done so much lately to impair the confidence of investors in the possibilities of the present market. It is the conviction of many that finished buildings of any magnitude will not vary more than ten or fifteen per cent from the average pre-war prices, and that by exercising care in selection and minimizing the demands for the more expensive products, buildings of a certain size can be erected today at prices not above the average for the last fifteen years, while as against this rentals have advanced very materially. Office rents, for instance, which were considered high at $1.75 per foot, now command $2.15 under exactly similar conditions. Store premises which rented before the war slowly at $5 to $8 a foot, will now command $7 to $10, and a diligent comparison of actual returns from a number of commercial buildings shows that the advance in rents is from two to three times even the estimated advance in cost of building. This may be challenged by some whose opinions are formed by the scareheads of the daily papers, but one of the shrewdest real estate operators in the country made the statement within a week that investment conditions are now more favorable to large returns on building operations than they have been at any time since 1912, and that he was proposing to get into the game at once without waiting for the later rush of those who are too timid to read aright the signs of the market and to act thereon. That mental viewpoint which so many flatter themselves by calling conservative, but which is more often nothing but ignorance of real conditions or inability to measure them, is largely responsible for our present lack of building construction, but it also implies no small measure of unwillingness to admit the imperative obligation resting on capital to keep moving. Therefore, the statement that high costs preclude building now, ought to be effectively and promptly challenged by every architect who is interested in the welfare of the country; and we, as a profession, should make it our business to show at once by figures and by comparison that building is not in any sense prohibitive in price. We ought to make it our first duty to seek out and argue with all holders of capital and all investors that it is both their duty and their opportunity to build and to build now. Don't sit around looking serious, wise, or foolish, while complaining of the alleged impossible costs of building, but get busy and at least find out the actual conditions by obtaining actual bids in the market for actual work from actual plans, and all the indications are that the high prices bogy will vanish in thin air.

THE Information and Education Service of the Department of Labor announces under date of February 11 that a well known St. Louis architect writes: "I am firmly convinced that the one thing the building public wants to know is the cost of building today as compared to the next three to five years. If they could be assured that the cost will not drop within that time, there would be a tendency to proceed with the needed work." The Department is now seeking this information and will make it public when secured.